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COMMANDER MILITARY SEALIFT COMMAND
WASHINGTON NAVY YARD BLDG 210
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COMSCINST 3400.3
PM1H
29 May 1998

COMSC INSTRUCTION 3400.3

Subj: HOSPITAL SHIPS (T-AH) PATIENT DECONTAMINATION PROCEDURES

- Ref: (a) OPNAVINST 3501.161C, Projected Operational Environment (POE) and Required Operational Capabilities (ROC) for the T-AH-19 Class Hospital Ship
- (b) COMSCINST 3500.9, Hospital Ships (T-AH) Medical Treatment Facility (MTF) Training Strategy
- (c) OPNAVINST 5440.75A, Administration, Operation and Logistic Support of the T-AH 19 Mercy Class Hospital Ships

Encl: (1) T-AH 19 Mercy Class Hospital Ship Standing Operating Procedures (SOP) for Decontamination and Monitoring of Patients Exposed to Chemical Agents

1. Purpose. To publish enclosure (1) and prescribe associated policies for its use.
2. Applicability. This instruction applies to Commander, Military Sealift Command, Atlantic (COMSCLANT) and Commander, Military Sealift Command, Pacific (COMSCPAC); Military Sealift Command Naval Fleet Auxiliary Force (MSC NFAF) East and West; National Naval Medical Center (NNMC) Bethesda; Naval Medical Center (NMC), San Diego; USNS COMFORT and USNS MERCY and USNS COMFORT and USNS MERCY Medical Treatment Facilities (MTF).
3. Background
 - a. Reference (a) requires the hospital ships to be capable of decontaminating and monitoring limited numbers of injured/wounded patients exposed to chemical agents.
 - b. Reference (b) requires each hospital ship MTF to identify and train a team to decontaminate patients.

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c. Reference (c) outlines responsibilities of primary sourcing medical centers (NNMC Bethesda and NMC San Diego) to support the training of the hospital ship MTFs staff.

d. Enclosure (1) delineates detailed procedures for the safe and effective decontamination and monitoring of patients exposed to chemical agents.

4. General Policies

a. Enclosure (1) is the definitive guide for decontaminating and monitoring patients exposed to chemical agents and received onboard the hospital ships.

b. NFAF East and West Project Officers and hospital ship MTF FOS Commanding Officers (COs) and ROS Officers in Charge (OICs) will ensure that realistic, comprehensive team training is scheduled and conducted on at least a semi-annual basis using procedures outlined in enclosure (1).

c. Members will be assigned to the decontamination team for a minimum of 18 months; to ensure integrity of operations, turnover of members will be managed so as to have minimal disruptive effect on the team's ability to effectively carry out its mission.

d. The MTF FOS COs and ROS OICs will ensure that the Authorized Medical Allowance List (AMAL) designated to support patient decontamination operations remains current and valid.

e. Recommended changes to the SOP will be submitted to COMSC/PM1 via the chain of command; however, before submission, the originating hospital ship MTF will coordinate all proposed modifications with the other ship.

f. The Immediate Unit Commander will request that the MSC Afloat Training Team (ATT) review decontamination team training/performance on at least an annual basis to ensure compliance with enclosure (1).

5. Action

a. The hospital ship MTFs shall use this SOP to conduct team training and will comply with the general policies outlined above.

b. The hospital ship MTFs and primary sourcing medical centers will ensure qualified personnel are assigned to the decontamination team and are trained in accordance with this instruction.

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c. All applicable organizations will review this SOP at least annually to ensure it is consistent with the latest concepts and doctrine for patient decontamination and monitoring.

Distribution:

COMSCINST 5000.19

List I (Case A, B)

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**T-AH 19 MERCY CLASS HOSPITAL SHIP
STANDING OPERATING PROCEDURES (SOP)
FOR DECONTAMINATION AND MONITORING OF PATIENTS
EXPOSED TO CHEMICAL AGENTS**

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1. SCOPE

This SOP specifies the procedures, equipment, supplies and personnel required for receiving, decontaminating and monitoring limited numbers of patients who have been exposed to chemical or biological warfare agents. This document applies only to the receipt of contaminated personnel by the T-AH 19 and T-AH 20 hospital ships. It is assumed that steps of gross liquid decontamination have been applied before the casualties are transported to the ship.

This SOP does not replace or supersede U. S. Navy CBR measures that are to be employed in the event of a chemical or biological attack upon the ship.

2. GENERAL DESCRIPTION OF THE DECON PROCESS

Contaminated patients are to be processed only through the flight deck DECON station. This station has three pairs of DECON compartments (three parallel lanes) that allow up to three patients to be processed concurrently. A station diagram is shown in Figure 1.

The DECON station acts as a transition area, allowing undergarment removal, skin decontamination and chemical agent monitoring to take place in the controlled environment of the ship without releasing contaminants into the ship's ventilation system.

The initial steps of the procedures, removing patients' outer garments, are done in the open air of the flight deck. The remaining steps are performed inside the DECON station. The first compartment of each lane is designated the skin DECON compartment, and the second is designated the monitoring compartment.

This SOP is written for litter-borne patients. If contaminated ambulatory patients are received, the steps of decontamination, clothing removal and monitoring are performed in the same order. The patient is escorted and assisted through the process by a member of the DECON team.

The ventilation system of the flight deck DECON station maintains the entry passageway at a negative pressure and provides a flow of clean air from the elevator passageway (03-37-1), through the DECON compartments, and out an exhaust fan in the entry passageway (03-39-4). The vents are sized for proper flow velocity to prevent the release of airborne contaminants to the rest of the ship.

The airflow rate of the ventilation system produces one air change every 1.5 minutes in each compartment, so airborne contaminants will be purged rapidly, preventing release of contaminants to the staging area when doors are opened for moving patients.

The Chemical Agent Monitor (CAM) is employed in the DECON station to ensure that the patient is free of chemical contaminants when ready to enter the medical treatment facility. A secondary use of the CAM is to monitor DECON team personnel, equipment and the area of the flight deck used for decontamination after the processing is completed.

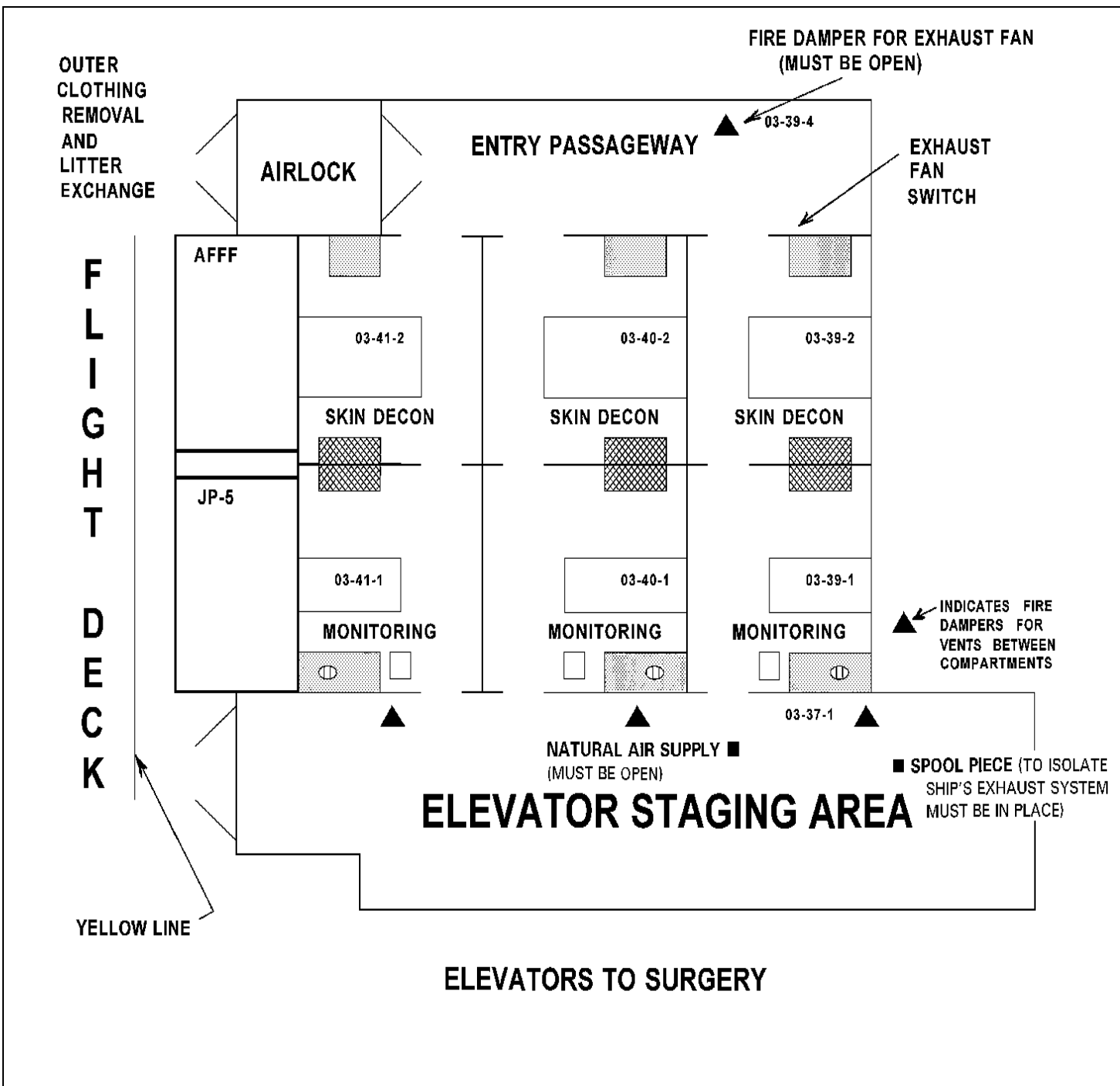


Figure 1. Diagram of the Flight Deck DECON Station

3. PERSONNEL REQUIREMENTS OF THE DECON TEAM

To process three patients concurrently, that is, to operate all three lanes, the DECON team must have 34 members. Each lane requires 4 individuals on the flight deck, 4 in the first compartment and 2 in the second compartment. A CBR-D Coordinator and Medical Director of DECON oversee the operation, and two masters-at-arms (MAA) are responsible for the safe removal of weapons or ammunition brought onboard with the patients. Thus, the DECON team requires 14 people to receive one patient, 24 people for two patients and 34 for three or more patients arriving at one time, as the following table summarizes:

Location	Required for One Lane	Required for Two Lanes	Required for Three Lanes
Flight deck			
DECON team members	4	8	12
CBR-D Coordinator	1	1	1
Medical Director of DECON	1	1	1
Masters at Arms	2	2	2
Skin DECON Compartments			
Team members	4	8	12
Monitoring Compartments			
Team members	2	4	6
Total	14	24	34

One team member in each compartment or location is designated the team leader. At least one team member in each skin DECON compartment will be a nurse.

The Medical Director of DECON is an internal medicine specialist with a background in CBR-related medicine (i.e., infectious disease). He/she conducts triage and directs medical care for all contaminated patients throughout the decontamination process. He/she is responsible for the overall functions of the DECON team and the success of the patient decontamination process onboard the hospital ship. The individual filling this billet must receive appropriate specialized training in the medical management of CBR patients.

The CBR-D Coordinator is responsible for coordinating the functions of the DECON team, for training the team and for managing Authorized Medical Allowance List (AMAL) #8120 (Patient Decontamination). The CBR-D Coordinator may also direct the patient medical care at the discretion of the Medical Director of DECON.

4. IMPORTANT PRECAUTIONS

CAM Maintenance. The CAMs employed in the DECON station must be operated 6 to 8 hours every 2 weeks to maintain acceptable performance. This regular operation should be achieved using the alternating current (AC) power supply with D-Cell adapter. Alkaline D-Cell batteries (four per CAM) should be checked/replaced at regular intervals.

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Exhaust Fan. The exhaust fan overhead in passageway 03-39-4 (described further below) must be operating for DECON operations and for using the DECON station for screening/holding patients who may have infectious diseases. The airflow induced by this fan is critical to contamination containment. This fan is not used during other operations.

Litters. Only Decontaminable Litters (NSN 6530-01-380-7309), which have a mesh material that can be readily decontaminated, are to be used for transporting the patient into the DECON station. The patient must be transferred to the Decontaminable Litter on the flight deck once the outer clothing has been cut off.

Decontaminant. Chlorine solution (bleach) mixed with detergent is used for decontamination throughout the process. Immediately before the DECON operation begins, the DECON team must place 5% bleach (the strength of normal household bleach) in pails and prepare 0.5% bleach in other pails by diluting it with 10 parts water to 1 part bleach. The weaker solution is used for decontaminating skin, and the stronger solution for decontaminating equipment items. General purpose detergent (NSN 7930-00-282-9699) is added to both solutions of bleach (0.5% by weight).

Control of Doors. At no time should two doors of the same compartment be open simultaneously, nor should the forward and aft doors of the airlock in the entry passageway be open simultaneously when processing contaminated patients. Failing to observe this precaution will result in an interruption of the airflow and possible release of contaminants. Doors leading into the elevator passageway are controlled by the DECON team in the compartments adjacent to the passageway and will be opened only when the CAM indicates it is safe to do so.

Dwell Time in Compartments. The compartments are designed for a residence time of 10 minutes; that is, the time between closing the first door and opening the second door of each compartment should be 10 minutes when contaminated patients are being processed.

Communication. Doors should be opened only for movement of patients. Communication among the compartments should be made with radios, an intercom system or by writing notes (e.g., with grease pencil on writing board) visible through the windows between compartments.

Heat Stress. DECON team members must recognize the potential for heat injury when wearing their protective clothing for extended periods. Compartments may become warm during DECON operations, and the team leader must ensure that members drink liquids before, during and after the operations. Canteens with drink tubes should be placed in the compartments to allow team members to drink through the mask during the operations.

Ship's Course. To receive contaminated patients, the ship will steer into the wind, as normally occurs during helicopter operations. This is necessary because the main air intakes of the ship's ventilation system are not filtered and are forward of areas where decontamination will occur.

Oxygen Generation Station. Compressors in the oxygen generation station, located immediately aft of the flight deck, must be turned off during the DECON operation and remain off for a period of 1/2 hour after the DECON operations end.

5. PREPARATIONS

5.1 Preparing the Ship for Receiving Contaminated Patients

Immediately upon notification that contaminated patients are to be received, the CBR-D Coordinator will activate the ventilation system of the DECON station and ensure that general ship preparations are being made for receipt of contaminated patients (windward direction, securing the oxygen generation station).

The ventilation system of the DECON station is activated by turning on the switch near the forward end of passageway 03-39-4. The exhaust fan is located overhead in this passageway, and the fire damper for the fan must be in the open position for air to be drawn through the DECON station. This should be checked visually by examining the fan. Excessive noise of the fan is an indication that the fire damper is in the wrong (closed) position. Other preparations of the DECON facility are as follows:

(1) In the elevator passageway (03-37-1), check to ensure the spool piece is removed and blanks are mounted in the exhaust system overhead. This duct is normally concealed by the ceiling panels.

(2) In the elevator passageway, close the fire damper in the exhaust system E03-37-5. Open fire damper and the watertight closure for the natural supply duct.

(3) In the compartments, ensure that the dampers (three total) located in the vents between each set of compartments are open. These are located in the centerline bulkhead of the DECON station, about 5 ft above the floor. The damper handles are located in the elevator passageway on the portside bulkhead.

(4) Check that supplies and equipment specified below, are available in each compartment.

(5) Check that floor drains in the DECON compartments are open/unclogged.

(6) Close all doors of the DECON station.

5.2 Preparing Supplies and Equipment

CAMs. Turn on the Chemical Agent Monitors (CAMs) in each of the three monitoring compartments. These will be operated on alternating current (AC) and will have four batteries in each of the D-cell adapters to which the AC power is connected. Once the CAMs are warmed up, perform confidence checks on each CAM per the technical manual.

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Decontaminant. Prepare pails of decontaminant (chlorine solution with detergent) in two strengths: 5% and 0.5%. The 5% bleach is full-strength household bleach. The 0.5% bleach is prepared by diluting this with 10 parts water to 1 part bleach. General purpose detergent (NSN 7930-00-282-9699) is added to both solutions of bleach (0.5% by weight). The pails will be marked with tape to differentiate between the two solutions and will be allocated as follows:

Flight Deck: Two pails per station--one 5% and one 0.5% (maximum 6 pails).

Skin DECON compartment: Two pails per compartment--one 5% and one 0.5%.

Monitoring compartment: One pail per compartment--0.5% solution

Supplies for Flight Deck: Position the equipment listed in Section 6 below inside the entry passageway. It will not be taken onto the flight deck until the Flight Deck Director so directs. Two types of cutting instruments will be used: the V-Blade Safety Rescue Knife (5110-00-524-6924) will be used for rapidly cutting most areas of the garments. The blades of these knives will be checked for sharpness before the operation and will be replaced as necessary. The bandage scissors will be used to cut shoe laces, hoods and other areas not appropriate for the V-blade knife. The team leader will ensure that these supplies and those listed for each compartment are in place.

Wet the Flight Deck. To minimize the possibility of agent absorption into the surface of the flight deck, pre-wet the flight deck (from the entrance of the DECON station to 15 feet aft of the yellow line) with the fire hose 5 to 10 minutes before the contaminated patients arrive by helicopter.

5.3 Preparing the DECON Team and Flight Deck Personnel

Overgarments and protective masks of the DECON team will be stored in a readily accessible area and will be marked with the name of each team member for rapid access.

The flight deck personnel will wear the protective mask and protective gloves when supporting the landing and takeoff of the helicopter and when transporting the patient to the deck area forward of the yellow line.

DECON team members will dress in the protective ensemble (MOPP4 except for the monitoring compartment) listed for each station below. They will await the arrival of the helicopter in the DECON station. Those who are to perform procedures on the flight deck will wait in the entry passageway. Mask carriers will not be worn but will be left inside the DECON station. All personnel will wear voice amplifiers on their protective masks. They will check that each amplifier has a working battery installed before operations begin.

The CBR-D Coordinator or his/her designee will check each team member to ensure that the mask and protective clothing are donned and fitted properly.

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The Medical Director of DECON and the CBR-D Coordinator each will wear a white band with red cross on the left arm. Each team member will wear a strip of tape on the front of the uniform with his/her name marked on it.

All other ship's personnel will remain inside enclosed areas of the ship during and for 1/2 hour after the end of decontamination operations.

6. PROCEDURES TO BE PERFORMED ON THE FLIGHT DECK

Objective: Remove outer garments and place patient on a clean litter.

Setup: Up to three stations for concurrent processing of patients.

Staffing: Per station: 4 persons (at least one nurse per station)

Protective level: MOPP4 with decontamination apron (voice amplifier on mask).

Equipment and Supplies	Per lane	For three lanes
Trash can with trash bag inserted, (extra bags placed beneath first bag)	1	3
Pail of decontaminant, 5% chlorine solution	1	3
Pail of decontaminant, 0.5% chlorine solution	1	3
Bandage scissors	4	12
V-blade rescue knife	2	6
Zip-lock bags for field medical card	2	6
Sponges	2	6
DECON apron	4	12
Canteens of water (in passageway)	4	12
One Decontaminable Litter for exchange	1	3
3x5 card and pen (to mark personal effects)	3	9
Zip-lock plastic bag for field medical card and for personal effects found in outer garments	6	18
Fire hose, 1.5-in diam., multipurpose nozzle		1

Equipment should be staged in the entry passageway. When the helicopter landing operation is complete, and the patients have been checked for ordnance, take the equipment onto the flight deck and position the pails of DECON solution containing scissors and cutters at the yellow line near the entrance to the DECON station. (Up to three stations are set up, one station for each patient requiring decontamination, so that three can be processed concurrently.)

The flight deck personnel carry the patient from the helicopter across the yellow line and secure the litter on the deck. They return a folded clean litter (obtained from the ramp area) to the helicopter immediately, leaving the contaminated litter to be decontaminated and retained on the ship.

The MAA removes all battle dress items, ordnance and weapons. The patients' weapons must be checked with the CAM before being placed into the weapons storage area (done after patients have been processed). Weapons should be secured outside the skin of the ship or within the entry passageway of the DECON station until they can be monitored to determine that they are free of chemical contamination.

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The Medical Officer performs triage once ordnance is cleared. All procedures on the flight deck will be done with litters resting on the deck. Litter stands will *not* be used.

The following procedures are based upon the assumption that patients will arrive wearing protective mask, overgarment, gloves and overboots.

If the patient does not have a complete protective ensemble, the processing will be performed in the same order specified: removal of outer layer of clothing followed by inner layer of clothing. *If the patient has no protective mask*, he will be positioned with the head toward the bow of the ship, into the wind, while his clothing is removed on the flight deck.

6.1 Removing and securing personal articles from the overgarment pockets

Remove the patient's personal articles from pockets. Destroy all non-decontaminable items. Decontaminate the other items in 5% chlorine solution and place them in plastic bags. Label the bags with the patient's name and SSN (information will be written on a 3x5 card or piece of paper and then the card will be placed into the plastic bag). Seal the bags then wipe with 5% chlorine solution.

6.2 Decontaminating and cutting off the patient's hood

Hoods are of two general types: Those that attach to the mask and those that attach to the overgarment.

6.2.1 For hoods attached to the mask

Cover mask air inlet briefly with your hand as you decontaminate around it so that decontaminating solution will not get into the mask filter.

Dip the sponge in 5% chlorine solution, partially wring it out, and wipe off the front, sides, and top of the hood with the sponge. Dip scissors in 5% chlorine solution.

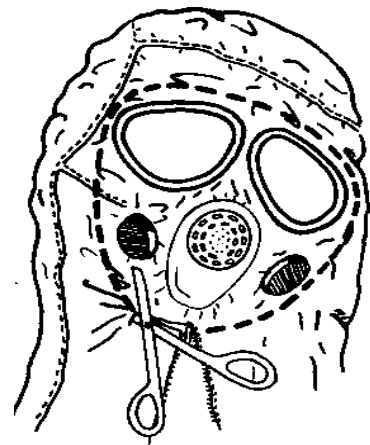


Figure 2
Cutting pattern for hood attached to mask

NOTE: Dip and scrub the scissors in the DECON solution frequently as you cut.

Cut the neck cord, zipper cord, hood straps and draw string. Open the hood zipper.

As shown in Figure 2, begin cutting at the zipper and proceed upward, close to the filter inlet covers and eye lens outserts. Cut upward to the top of the eye lens outserts and across the forehead to the outer edge of the next eye outsert. Cut downward toward the shoulder, staying close to the eye lens outserts and filter inlet covers, and cut across the lower part of the voicemitter to the zipper.

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Cut from the center of the forehead, over the top of the head to the bottom of the head so that the hood will lay flat on the litter. Fold the left and right sides of the hood to the sides of the patient's head, laying the sides of the hood on the litter.

6.2.2 For hoods attached to the overgarment

When decontaminating a patient wearing an overgarment with integral hood (such as the U. S. Navy garment), the hood is removed by cutting it from the top center toward the rear (or unzipping it) so that the hood material will lie flat on the litter. No decontamination of the hood is necessary.

6.3 Decontaminating the patient's mask and exposed skin around the mask

Decontaminate the exterior of the mask: Cover the mask inlets with your hand. Wipe off the front, sides and top of the mask with a cellulose sponge soaked with 5% chlorine solution. Uncover the air inlets.

Decontaminate exposed skin: Using the 0.5% chlorine solution, wipe down all exposed skin areas, to include the neck, hair, back of the head and the back of the ears.

6.4 Placing the Field Medical Card (FMC) in a plastic bag

Cut the FMC tie-wire, allowing the FMC to fall into the plastic bag. Seal the plastic bag and rinse it with the 0.5% chlorine solution. Secure the plastic bag to the patient by placing it under the protective mask head harness.

6.5 Removing patient's overgarment jacket

Using the V-blade cutter, cut the sleeves from the cuff to the shoulder of the jacket and then through the collar, as shown in Figure 3. Keep the cuts close to the inside of the arms so that most of the sleeve material can be folded outward.

NOTE: Dip and scrub the cutter in 5% chlorine solution before and after each continuous cut. *Do not apply decontaminant to the overgarment.*

Unzip the jacket (or cut alongside the zipper). Roll the chest sections to the respective sides with the inner black liner facing outward (toward patient). Carefully tuck the cut jacket between the arm and chest. Roll cut sleeves away from the arms, exposing the black liner.

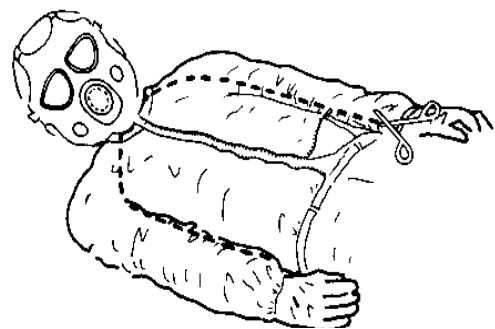


Figure 3
Cut pattern for jacket

NOTE: Medical items will usually be removed in the skin DECON compartment, rather than at this stage. *Upon direction of the Medical Director of DECON, bandages, splints and tourniquets may be cut while removing the overgarment or be cut around depending upon on the wounds.* The team leader will assess the type and extent of injuries and the need to replace bandages and tourniquets. If they are to be replaced:

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- a. For tourniquets, place a new tourniquet 2 to 1 inch proximal to the old one. Remove old tourniquet. DECON the skin around the wound with 0.5% solution.
- b. For bandages, cut off old bandage. DECON the skin with 0.5% solution. Replace bandage if necessary to control bleeding.
- c. For splints and backboards, remove and maintain body position, except in the case of wire splints, which may be left in place and decontaminated, as determined by the team leader or medical officer.
- d. For IVs, removal of IV bags and tubing is at the discretion of the Medical Director of DECON. Removal may be necessary for complete removal of the overgarment if the patient can be disconnected temporarily without being placed at greater risk.

NOTE: Old tourniquets, bandages and splints are bagged with contaminated clothing.

6.6 Removing the overgarment trousers

Using the V-blade cutter, cut the trouser legs from the ankle to the waist, as shown in Figure 4.

Keep the cuts near the inside of each leg, along the inseam, to the crotch. Avoid cutting through pockets.

Cut up the right leg and across the crotch of the trousers.

Cut up the left leg, cross over the crotch cut, and continue to cut up through the waistband.

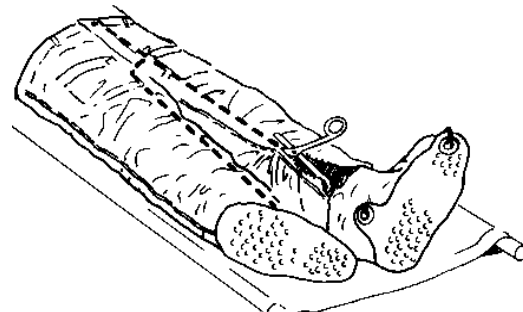


Figure 4

Pattern for cutting the trousers

NOTE: Dip and scrub the scissors in the 5% chlorine solution before doing each cut to avoid contaminating the inner garment or the patient's skin.

Fold the cut trouser halves onto the litter with the contaminated sides away from the patient. Make sure the outer side of the protective overgarment does not touch the skin or undergarments of the patient.

Roll the inner leg portion under and between the legs.

6.7 Removing the patient's rubber gloves

Decontaminate your own gloves in 5% chlorine solution and kneel with one person on either side of the litter.

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Lift the patient's arm up and out of the cutaway sleeve making sure that the outer side of the protective suit does not touch the patient's skin. (Lifting the arm may be contraindicated due to injury.)

Pull the rubber gloves off by rolling the cuff over the fingers, turning the gloves inside out. Alternately, grasp the glove at the fingertips and pull straight off. Do not yet remove the white glove liners, which are to be removed in the first compartment; however if the gloves fall off inadvertently, leave them off.

Lower the patient's arms and fold them across the chest. **NOTE:** Do not allow the arms to come into contact with the exterior of the overgarment.

Decontaminate your rubber gloves in the 5% chlorine solution.

6.8 **Removing the patient's protective overboots**

Kneel at the foot of the litter facing the patient and remove the overboot fasteners and first try to remove the overboot without cutting. If this is not possible, cut the front of the overboot from the top of the boot to the top of the foot.

Grasp the heel of the overboot with one hand and the toe of the boot with the other hand. Pull the heel downward and then toward you until the overboot is removed.

Using the 5% chlorine solution, wipe down the end of the litter before lowering the patient's leg. Remove the second overboot. **NOTE:** If possible, remove both overboots simultaneously to decrease the chance of contaminating the exposed combat boot. Decontaminate your own gloves using the 5% chlorine solution.

6.9 **Transferring the patient onto a decontaminable litter**

This transfer is performed with three persons kneeling on one side of the litter, placing their arms beneath the patient and rolling him toward them to lift him off the litter. A fourth person kneels opposite to remove the original litter, with all the cut overgarment material, and to place a clean decontaminable litter beneath the patient.

The first step is to DECON the lifters' aprons and gloves in 5% chlorine solution.

One lifter slides his arms under the patient's head/neck and shoulders, one under the back and buttocks, one under the thighs and calves. Care should be taken not to lift the cut overgarment material with the patient. On the command of lifter No. 1, lift the patient. ("Prepare to lift, lift.")

Once the patient has been lifted from the litter, all three lifters straighten up and roll the patient inward against their chests. **CAUTION:** Proper lifting procedures must be observed to prevent back injury.

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While the patient is being held, the fourth person quickly removes the contaminated litter and replaces it with a clean litter. The patient is then lowered to the clean litter.

After the transfer is completed, the dirty litter is rinsed with 5% chlorine solution and placed aside to air dry. Decontaminate your gloves with the 5% chlorine solution.

6.10 Transporting the patient to the first compartment of the DECON station

DECON team members on the flight deck gather contaminated equipment, clothing and other items, placing them in a plastic bag for removal. They decontaminate their rubber gloves in preparation for the next patient.

Once all patients have been taken into the passageway, all equipment and DECON supplies are placed inside the first set of doors of passageway 03-39-4. Handles of the doors leading into the DECON station are also decontaminated. Outer garments from the patients are gathered up, along with discarded bandages and are placed in plastic bags. These bags are secured temporarily in the passageway so that helicopter operations can resume. Cutting teams decontaminate their own gloves, aprons, hoods and masks.

7. PROCEDURES TO BE PERFORMED IN FIRST COMPARTMENT

Objective: Remove inner garments to the skin and decontaminate the skin.

Staffing: 4 (at least one nurse per compartment)

Protective level: MOPP4 with decontamination apron (voice amplifier on mask)

Equipment and Supplies	Per compartment	For three lanes
Trash can with trash bag inserted, extra bags	1	3
Pail of decontaminant, 0.5%	1	3
Pail of decontaminant, 5%	1	3
Containers of bleach	2	6
Measuring cup for dilution of bleach	1	3
Bandage scissors	2	6
V-blade rescue knife	2	6
Zip-lock bags for field medical card	2	6
Sponges	2	6
DECON apron	4	12
Zip-lock plastic bags (for personal effects)		one per patient
Canteens of water (in compartment)	4	12
Sharps container	1	3
Pad of paper and ball point pen	1	3
Clock or timer for 10-minute dwell time	1	3
Felt marker/grease pencil with writing board (for communicating through window)	1	3
Supplies to replace bandages, tourniquets, splints if necessary		

7.1 Preparations

All cutters have decontaminated their gloves, scissors, and work stands with DECON solution. All clothing from previous patient has been bagged for return to the entry passageway.

Flight deck team leader passes patient's treatment status and injuries to leader of team in first compartment.

Patient remains on the decontaminable litter as he is placed on the stainless steel table in the first compartment. Doors to the compartment are closed, and the following procedures are performed.

7.2 Removing the boots or shoes

Cut the boot laces along the tongue of the boot. If necessary, cut the tongue from the top of the boot to the top of the foot.

Grasp the boot heel with one hand and the boot toe with the other hand. Pull the heel downward and towards you until the boot is removed.

Use 5% chlorine solution to wipe down the end of the litter.

Lower the patient's leg, and remove the other combat boot.

Place all clothing into a disposal container and decontaminate your gloves using the 5% chlorine solution.

7.3 Removing innergarments by cutting

Cut off all remaining clothing. Remove the socks either by cutting or by rolling them down over the foot, turning them inside out. Log roll the patient to one side to remove the pieces of clothing once the clothing has been cut.

Apply bandages, splints and tourniquets either before or during the inner garment cutting process depending on their location, nature of injury and the team leader's judgment.

7.4 Removing and securing personal effects from pockets

Remove the patient's personal articles from the pockets and place them in plastic bag(s). Label the bags with the patient's name and SSN (information will be written on a 3x5 card and will be placed into the bag). Seal the bags and wipe with 5% chlorine solution.

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7.5 Decontaminating the patient's identification tags

The ID tags should be decontaminated in place with 0.5% chlorine solution and will not have to be removed. If the ID tags have plastic covers, cut away the covers with bandage scissors by slipping the flat edge of the scissors between the plastic cover and the ID tag and cut.

7.6 Cleaning the wounds

Clean wounds with sterile saline, betadine solution or soap and sterile water.

7.7 Decontaminating the skin, hair and litter

Sponge 0.5% chlorine solution over the patient's body, including his hair, as the hair readily absorbs agent if it is exposed to agent vapor. Exercise care not to get decontaminant in the patient's eyes. Log roll the patient to one side to apply the decontaminant to his back. Apply the decontaminant thoroughly to the litter while the patient is rolled to the side. Rinse the patient and litter completely with the spray device.

7.8 Transferring the patient to next compartment

DECON team members check to see that the next compartment is ready (outer door closed and compartment not occupied by another patient) before opening door and taking the patient into next compartment for monitoring. **CAUTION:** A period of 10 minutes is required for a complete purge of airborne contaminants in the compartment; that is, the door into the monitoring compartment cannot be opened until 10 minutes after the door into the skin DECON compartment was last opened.

Discarded clothing is bagged. It is passed back to the passageway only after the patient has been taken to the next compartment and the door has been closed. Wash off the table with 5% chlorine solution before the next patient enters.

8. PROCEDURES TO BE PERFORMED IN SECOND (MONITORING) COMPARTMENT

Objective: Monitor with CAM and remove mask.

Staffing: 2

Protective Level: Mask only (voice amplifier on mask), with gloves (7-mil thickness) and apron.

Equipment and Supplies	Per compartment	For three lanes
CAMs with D-Cell Adapter and AC power supply	2	6
Spare D-Cell batteries	8	24
AN-PDR 27 Low Survey Meter, Radiac	1	3
Small trash bag (to contain mask)	one per patient	
Pail of 0.5% decontaminant with sponge	1	3
Containers of bleach solution with measuring cup for dilution	2	6
Canteens with drinking water	2	6

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Equipment and Supplies	Per compartment	For three lanes
Cloth sheets		one per patient
Clock or timer for 10-minute dwell time	1	3
Felt marker or grease pencil w/ writing board (communication through window)	1	3
Supply of IVs		

8.1 Preparations

Monitoring for chemical contamination will be performed with the CAM, and for radiological contamination, the AN-PDR 27 Radiac, which is currently available on the ship (4 each per ship). There is no real-time monitoring capability for biological agents.

For chemical monitoring, the CAM should be turned on as soon as the team is alerted that a chemically contaminated patient is to be received. It is turned on by pressing the on/off switch on its left side and waiting for the display to clear in the H mode. It should be warmed up, preferably for 30 minutes, using its AC adapter. It must be warmed up and cleared before it can be used effectively for monitoring. Information on using the CAM is found in Technical Manual SW073-AD-MMO-010/43092, *Shipboard Chemical Agent Monitor (CAM) System*.

The CAM must be turned on or off in the H mode only. If it is not in the H mode when you turn it on, turn it off momentarily, change modes and turn it back on. The CAM's computer must be in the H mode to perform its automatic initialization routine.

Perform confidence checks on both modes. Also perform confidence checks *after* monitoring each patient.

- Apply the confidence tester to the CAM inlet for *only 1 second*, then pull it away. Longer than this will require much longer for the CAM display to clear.
- If the CAM is working properly, the confidence check should cause a response of at least 3 bars, preferably 5 bars. If not, try the confidence test again. If a minimum of 3-bar response is not obtained, the CAM should be replaced (or be run for an extended period to improve its response).

Before the patient arrives, unplug the CAM so that it operates on battery power and its movement is not restricted by the length of the AC power cord. Unplugging causes a momentary interruption in power and requires about 1 minute to initialize the CAM again. The CAM can be operated in the battery power mode either with the D-Cell adapter (which allows for AC operation) or with the special lithium battery (NSN 6135-01-362-1368). Monitoring should be initiated with fresh batteries to prevent interruptions.

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8.2 Monitoring the patient and his personal articles

Monitor with the CAM in each mode. If two CAMs are available, set one on the H mode and one on the G mode and monitor with both concurrently. Or if there is certainty of the type of agent the patient was exposed to (based upon M8 detector paper readings, for example, prior to patients' arrival onboard the ship), monitor with both CAMs on the same mode. Monitor the:

- Person
- Litter, particularly the handles
- Bag of personal effects
- Field medical card
- Identification tags
- IV bag and tubing

Keep the CAM inlet about 1/2 inch from the skin as you monitor. The greater the distance, the less likely it is to respond to the contamination.

Move the CAM slowly over the surface, about 1 foot every 2 seconds, and follow a pattern that ensures you monitor the person thoroughly.

As soon as any bar readings appear, pull CAM away and/or put on cap.

Check first the areas that would most likely be contaminated: near wounds where the garment was broken, at the neck, ankles and waist. Also monitor the areas that might adsorb agent vapor, such as the hair.

If you find contamination, stop monitoring and note the general location. Use the decontaminant to spot DECON where the CAM indicates there is contamination.

Replace the black cap on the CAM nozzle between patients, even though the display may be showing no bars.

Before switching channels (or turning off the CAM), *always clear it* by putting on the inlet cover and waiting for a zero bar reading. Note: It is acceptable to switch from G to H with one bar showing, but to switch from H to G, the display must first show no bars.

If the letters "BL" appear on the display, it means the battery is low; replace the D-cell batteries if this occurs. Three dots means it is momentarily confused by what it is sensing.

8.3 Removing the mask

Once monitoring is complete and there is no contamination present, remove the patient's mask. Place the mask in a small trash bag and close it by knotting the neck. This mask does not proceed into the medical treatment facility with the patient.

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After removing mask, clean the face. Pass the bagged mask back to the first compartment when the door is opened for the next patient to enter.

8.4 **Transporting the patient from the DECON station**

Cover the patient with a clean sheet and transport him to the clean staging area in the elevator passageway 03-37-1. **CAUTION:** A period of 10 minutes is required for a complete purge of airborne contaminants in the compartment; that is, the door into the clean staging area cannot be opened until 10 minutes after the door from the skin DECON compartment was last opened.

9. **PROCEDURES FOR DECONTAMINATING THE FACILITY AND THE DECON TEAM**

Once all patients have been processed through the DECON station, the CBR-D Coordinator will direct the team members in decontaminating themselves, the DECON station and the flight deck.

Team members from the flight deck will begin decontaminating first, as their portion of the process ends first. They will apply 5% chlorine solution to areas of the flight deck upon which litters were placed during the processing. They will place all discarded material in bags, seal them by double knotting the necks of the bags and make sure all debris is removed from the flight deck. They will decontaminate scissors, V-blade rescue knives and aprons and place these reusable items in the entry passageway.

They will then decontaminate their gloves and overboots and proceed into the entry passageway to remove overgarments. The team members will remove their overgarments in the passageway as follows:

Using the buddy method, each will cut the back of the overgarment smock with a V-blade knife by cutting upward from the waist through the hood. They will turn the arms inside out as the smock is removed, roll the cut smock inside out and place it in a plastic trash bag.

Each will then remove the overgarment trousers by cutting each leg from the back, starting at the ankle and proceeding through the waist. The cut trousers will also be sealed into plastic trash bags.

As soon as the last patient has been transported out of the skin DECON compartment, the team members in that compartment will bag all discarded items, then decontaminate (with 5% chlorine solution) the patient table, cutting devices, bulkheads and deck. These items and the room will then be rinsed with water.

The team members will then decontaminate the exposed areas of their masks, aprons, overboots and gloves in order. Once this is done, and once the patient is out of the next (monitoring) compartment, the team members will then remove their overgarments as described above. They will remove overboots last and leave them in the room to aerate.

While still wearing mask and gloves, they place the bagged overgarments near the entrance to the compartment and proceed into the monitoring compartment to undergo a CAM check.

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Once the CAM check shows they are clean, the team members will remove their masks, then their gloves, leaving both in the compartment to aerate, and proceed into the clean staging area. Note: Scrubs may be repositioned here for team members to change into upon completion of the decontamination process.

Once the team members from the skin DECON station have moved into the monitoring compartment, the flight deck team members move from the entry passageway to the skin DECON compartment wearing their masks, gloves and overboots. They first place the bagged garments left in the compartment into the entry passageway and shut the door.

They next remove their overboots and leave them in the compartment to aerate. Wearing mask and gloves they proceed into the monitoring compartment once the preceding team members have vacated it.

Once monitoring has found each team member to be clean, he/she removes the mask, then gloves, leaves both items on the patient table to aerate and exits into the clean staging area.

Once CAM operators have monitored all personnel and cleared them to exit the DECON station, they will move backwards through the DECON station, making CAM checks to ensure the areas and equipment have been decontaminated. On the flight deck, they will monitor areas of the deck that have been decontaminated and the weapons that have been taken from the patients.

Note: When monitoring with CAM on the flight deck, strong winds can affect the CAM's ability to detect. The CAM nozzle must be held the proper distance from the surface, about 1/2 inch, and must be swept over the surface at a slow rate (about 1/2 foot per second) to monitor most effectively. The CAM is also susceptible to false positive readings in the presence of Aqueous Film Forming Foam (AFFF) and JP-5 fuel.

Once all monitoring outside the DECON station is completed, CAM operators will unmask and secure the CAMs.

10. **DISPOSAL OF CONTAMINATED GARMENTS**

Contaminated garments, bandages, splints, etc. removed from patients in the DECON process will be placed in double plastic bags and be sealed by double knotting the necks of the bags. Once the DECON operations are completed and the flight deck has been cleared, these bags will be taken aft, remaining outside the skin of the ship, to the biological materials incinerator, where they will be burned.

11. **GLOSSARY**

CAM	Chemical Agent Monitor
CBR	Chemical, Biological, Radiological
FMC	Field Medical Card
G-Mode	The operating mode of the CAM for monitoring G-agents
H-Mode	The operating mode of the CAM for monitoring mustard
MAA	Master at Arms
MOPP4	Mission Oriented Protective Posture level 4
NSN	National Stock Number