

Shipboard Decon of Returning Casualties

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Current doctrine does not address the dilemma of decontaminating casualties returning from forces ashore. This knowledge gap will increase the commander's "fog of war" at a time when a seamless transition of operations and methods must exist between services.

By incorporating current principles of decon with the capabilities of the Navy's landing helicopter amphibious (LHA) or landing helicopter dock (LHD) class ship the force commander has the means to bridge this gap. This class of ship provides medical support up to the hospital level, decon washdowns, and the capability to retrieve casualties via aviation or landing craft.

I would like to provide an overview on concepts we can use to begin to alleviate this dilemma. I've focused on ship-to-shore movement and unique decon operations regarding on-board naval shipping.

Situation

Naval amphibious task force with Marine landing force conduct a surface and heliborne assault on the country of Orange in order to expel the forces of Purple. On D+2, during the assault on landing force objective, Marine forces receive a persistent chemical strike (nerve) mixed with conventional strike-causing casualties. The amphibious task force initiates MOPP4 precautions until downwind hazard is determined. Precautions include:

- Activate Circle William—the securing of all openings on the ship in order to minimize agent penetration.
- Activate collective protection system.
- Activate NBCC within each naval ship in combat information center and landing force operations center on the command ship.
- Don protective clothing.

Upon completion of threat analysis, CIC determines the amphibious task force is not in the downwind hazard of chemical strike. Landing force staff determines minimal elements ashore have been contaminated; those units will undergo operational decon within the next hour or two. The down side is that the current combat service support buildup ashore is insufficient to cope with chemical casualty decon and trauma-level medical support. Based on combat service support status, Commander, Amphibious Task Force designates the LHA/LHD as the primary care ship.

Commander, landing forces, is still responsible for initial triage of casualties, immediate level decon, and air transport to naval shipping or ground transport to beach support area for landing craft extract. Commander, amphibious task force, requests you, the amphibious task force NBC officer, submit courses of action for medical evacuation and decon operations.

Having laid out the above situation, I delineate ship-to-shore options for retrieving chemical contaminated casualties. Each option provides an overview on control of contamination, location of returning craft, decon, and advantages/disadvantages.

Aviation Evacuation

One option is to transport the casualty via aircraft.

Type of aircraft. For this situation I've selected the CH-46 helicopter as the primary medical evacuation platform. This could be modified and used by other types of military helicopters.

Control of contamination.

- Wrap casualty in a tarp or poncho for control of liquid contamination while en route to naval shipping.
- Place casualty toward rear of aircraft to allow flow-through air (coming in from forward gunners window/side door) to push most vapor contamination out rear ramp area.
- Have crew chief spray wrapped casualty and surrounding area with M11 decontaminating apparatus (5% solution of household bleach). **WARNING:** Be sure spray does not come in contact with bare skin or open wound. It burns on contact.

Returning aircraft. Prior to the return of aircraft to ship, take a few precautions to aid in the reduction and control of contamination onboard the ship.

- Facing the ship into the wind takes advantage of the wind blowing over the flight deck. This provides air circulation over uncontaminated air assets on forward deck and pushes contaminated vapor off rear deck.
- Use flight deck fire hoses to wet down rear port side landing spot to create a barrier of seawater between possible contamination from aircraft and flight deck. Do this after aircraft departs to remove or reduce contamination on flight deck. Seawater reduces the effectiveness of chemical agents attaching themselves to the skin of the ship.
- The ship conducts a continuous scan of aft flight deck with chemical warfare directional detector. The AN/KAS-1 is a standoff detector, capable of scanning for nerve agent (vapor) several nautical miles from ship.
- To limit the contamination zone on flight deck, have returning aircraft land on rear portside spot.

Decon of aircraft and aircrew. When casualties are transferred to shipboard personnel, conduct limited operational decon of aircraft.

- Conduct decon by spraying aircraft cargo area (flooring) from front to rear ramp area with potable water. (Do *not* use ship's fire hose because of salt water corrosion and high pressure.) Pay close attention to area where casualties were located.
- Reduce or negate *outside* contamination through aeration en route to naval shipping.
- When mission ends, conduct thorough aircraft decon to return aircraft to conventional operations.
- When mission is complete, process through ship's collective protection system decon station to remove contamination from personnel.

Advantages:

- Aircraft can speed casualty to medical support for immediate care.
- Aeration reduces or negates contamination on aircraft.
- Aircraft has close access to ship's collective

protection system decon station for aircrew decon.

Disadvantages:

- Aviation evacuation contaminates air assets and precludes their use in conventional operations until decon.
- Flight crew operating medical evacuation has reduced crew time due to heat buildup, fatigue, and stress while operating in MOPP4.
- Aviation evacuation restricts or curtails conventional air operations on flight deck during casualty transfer and decon.

Landing Craft Evacuation

A second option uses naval landing craft. The landing force unit is responsible for delivery of casualties from beach support area.

Type of landing craft. I've limited the discussion of landing crafts to utility landing craft and mechanized landing craft. This in no way precludes the utilization of landing craft air cushion as a means of retrieving casualties.

Control of contamination.

- Wrap casualty in a tarp or poncho for control of liquid contamination while en route to naval shipping.
- Place casualty on pallets forward of landing craft, in order to reduce contamination signature.
- Spray outside of wrapped casualty and surrounding area with M11 decontaminating apparatus (5% solution of household bleach). **WARNING:** Be sure spray does not come in contact with bare skin or open wound. It burns on contact. Based on MOPP analysis, the TAP apron or wet weather clothing should be considered for landing craft personnel working in or around contaminated casualties. These garments minimize the effects seawater has on the chemical protective overgarment.

Transfer of casualties. Stern gate marriage reduces contamination signature within well deck of primary ship while allowing set up of decon site within.

Decon of landing craft and crew. Due to their low freeboard, the LCM and LCU become covered with sea spray, which has the ability to remove some agent from the craft. For example, 60 minutes after contamination of an LCM by a blister agent (HD) in seawater at 25°C, contamination is reduced by 50%. Thickened GD (nerve agent) hydrolyzes at an even faster rate than HD. Upon completion of mission check to determine extent of decon requirements. Crew proceeds through contamination control area, to limit spread of contamination, prior to entering decon station.

Advantages

- Amphibious task force can maintain air operations.
- Effects of seawater on agent reduce or negate

contamination of landing craft.

Disadvantages

- There are time constraints in transporting casualties from beach support area to primary care ship.
- Sea conditions could affect ship-to-shore operation.
- Conventional well deck operations are restricted or curtailed.

Let's examine the options available for decon. Each option provides an overview on location, set-up, and procedures, culminating with advantages/disadvantages.

Flight Deck Decon Operations

In conjunction with air transport, one option is to use the flight deck triage area for set up and conduct of decontamination.

Location. Establishing site on rear starboard side, near flight deck triage station takes advantage of precautions mentioned earlier (see Aviation Evacuation) for returning aircraft.

Set-up and procedures. Chemical casualty decontamination site layout should follow FM 3-5 along with a few alterations to allow for deck space and location of medical evacuation elevator.

- Use the *dirty dump* to stage casualties awaiting entry into chemical casualty decontamination site, along with recheck (M8 paper) of casualty for contamination. Location will vary based on ship. RECOMMENDATION: LHA—near twin antennas starboard side rear; LHD—even with starboard side rear elevator.

- The actual *casualty decon site* should be set upwind of the dirty dump site (approximately 30-40 feet). The steps and procedures within the chemical casualty decon site remain the same as outlined in FM 3-5, with exception of the shuffle pit. To alleviate this problem (due to flight deck), use a wooden box (rough dimensions 4 feet by 4 feet with 2 feet by 4 feet for sides) to hold decontaminant (HTH or powdered soap). Set up just aft of medical evacuation elevator. Procedures remain the same except for the addition of final chemical check.

- *Clean area* is that space between the transfer line and the medical evacuation elevator. Use to check completeness of decon of casualty (M8 paper) prior to the transfer of casualty to the medical elevator. During transport in medical elevator, casualty remains masked until arrival within medical area (based on hazard). Place M8A1 chemical alarms near entry to medical elevator (flight deck and medical facility) to check for contamination (vapor) hazard.

- *Site clean up.* Using flight deck fire hoses (high-pressure salt-water bath) wash down deck from elevator toward rear deck. Scrub down areas of high contamination transfer with 5% solution of bleach, then rinse. Upon completion of CCDS along with cleanup, personnel will then process through CPS decontamination station.

Advantages

- Well deck decon operations use current doctrine with few modifications to accommodate setup on naval ship.

- Flooding (ballasting down) upon completion eases well deck contamination.

Disadvantages

- During casualty decontamination operations, well deck decon operations restrict or curtail operations.

- Access to CPS decontamination station for site personnel is a length distance from the well deck.

- Due to well deck having wooden bumpers on side and flooring, agent could saturate.

- Operating site will pull naval personnel from their regularly assigned duties, causing certain sections to work at minimal staffing. Possible augmentation by landing force personnel still remaining on board could alleviate or assist this dilemma.

- Distance to medical facility (traversing two ramps) will demand the use of stretcher teams, with increase in personnel requirements.

Commander, amphibious task force, is briefed on available options. He directs plan for medical evacuation via aircraft with corresponding decontamination on flight deck (LHA or LHD). One CH-46 with backup crew is dedicated to casualty evacuation operation. Limited air operations continue from forward deck, with aircrews operating in MOPP4. UH-1N and Cobras transfer operations to LPDs. Commander, landing forces, attaches one monitor team (with CAM) for operations with shipboard decontamination unit.

Modifying current doctrine and full utilization of all assets at a commander's disposal will provide for the safe return and decontamination of battlefield casualties. The concepts I've put forth are by no means the only methods available to a commander. But these concepts are a starting point from which joint SOPs can be derived and utilized. It's our task as leaders to reduce this "fog of war" and create a seamless transition of operations between the services for the betterment of our casualties.