

UNITED STATES MARINE CORPS
FIELD MEDICAL TRAINING BATTALION
Camp Lejeune, NC 28542-0042

FMST 507

Medical Support for Military Operations in Urban Terrain (MOUT)

TERMINAL LEARNING OBJECTIVES

1. In various environments, given standard field medical equipment and supplies, **provide first responder medical support to meet mission requirements.** (8404-HSS-2006)

ENABLING LEARNING OBJECTIVES

1. Without the aid of reference, **identify the definition of urban warfare**, within 80% accuracy, per Prehospital Trauma Life Support, Current Military Edition. (8404-HSS-2006a)

2. Without the aid of reference, given a list, **identify the potential health threats of MOUT**, within 80% accuracy, per Prehospital Trauma Life Support, Current Military Edition. (8404-HSS-2006b)

3. Without the aid of reference, given a list, **identify the special requirements of casualty evacuation (CASEVAC) in MOUT**, within 80% accuracy, per Prehospital Trauma Life Support, Current Military Edition. (8404-HSS-2006c)

4. Without the aid of reference, given the requirement in a simulated combat scenario, **operate in a MOUT environment**, to meet mission requirements, per Prehospital Trauma Life Support, Current Military Edition. (8404-HSS-2006d)

1. **DEFINITION OF MOUT**

Background - Throughout history, battles have been fought on urbanized terrain. Recent examples are Beirut, Panama City, Mogadishu, and Iraq. It is impossible to develop one set of tactics, techniques and procedures that can be applied to every scenario. Combatants and medical providers are required to quickly adapt to each mission, terrain, and situation.

Military Operations in Urban Terrain (MOUT) Defined - Urban warfare, or Military Operations in Urban Terrain (MOUT), is best defined as those military actions planned and conducted on a terrain where man-made structures impact the tactical options available to the commander. This terrain is characterized as a four-dimensional (air, buildings, streets, and subways) battlefield with the following features:

- Considerable rubble.
- Ready-made fortified fighting positions.
- An isolating effect on all combatants.

2. **POTENTIAL HEALTH THREATS IN MOUT.**

a. The medical threats in MOUT present unique challenges to Health Services personnel. Each of the tactical considerations requires a parallel plan for medical response.

b. Combat in urban terrain and the populations encountered can complicate the ability of medical personnel to provide timely, sustainable support. The patient collection point must be preplanned and established at relatively secure area accessible to both ground and air ambulances.

c. Casualty rates are generally higher than conventional battles. Explosions are the most frequent cause of injury in an urban setting. These explosions may be generated from tanks, mortars, or improvised explosive devices (IED's). These explosions are likely to produce blast related injuries which are covered in a separate lesson. Small units may be spread out across a large area. Unit training in the practice of "self-aid" and "buddy-aid" is essential. Each combatant should be able to quickly and effectively apply a tourniquet, field dressing, and hemostatic agent.

Other Potential Health Threats of MOUT include:

- (1) Isolation and reduced response to casualties
- (2) Imposition of civilian casualties and refugees
- (3) Undefined lines of battle that delay medical treatment
- (4) Mass casualty/casualty overload situations
- (5) Communicable disease endemic to the area
- (6) Lack of water and sanitation
- (7) Combat stress
- (8) NBC environment

Psychological Casualties

In addition to blast injuries, units are likely to experience an increase in psychological injuries. This is due to lengthy exposure to factors resulting from a constant threat of a hidden enemy. Prolonged fear of sniper fire and hidden IEDs along with the repeated sight of the dead and dying are predominant factors leading to combat stress casualties. Medical units should be prepared to treat these individuals.

Civilian Casualties

Medical units must be prepared for the influx of large numbers of civilian casualties. Units should prepare for the possibility of geriatric and pediatric patients. Large numbers of civilians could overwhelm the capabilities of military medical units. Units should, therefore, establish a plan for this possibility prior to engaging.



AL TAQADDUM, Iraq— Servicemembers help triage injured Iraqi civilians outside of Taqaddum's medical facility after a suicide truck bomb exploded in northern Habbiniyah.

Infectious Disease

Areas experiencing urban combat are likely to have many infectious diseases in the area. The problem will be worse due to poor general sanitation measures and limited amount of public health services.

Animals: Diseases can also be carried by the many animals in the area (rats, mice, dogs, etc.).

People: Interacting with the civilian populace or enemy prisoners of war can expose you or your Marines to such diseases as malaria, tuberculosis or leishmaniasis. Sexually transmitted diseases such as gonorrhea, syphilis, hepatitis, and HIV may also be prevalent.

Water: Potable water will be limited. Troops in urban conflict can consume up to 5 quarts per day on a normal occasion and 12 quarts of water per day in extreme heat environments. If the demand for water is greater than the ability to re-supply, they may be tempted to drink water from local sources. This exposes them to hepatitis, intestinal parasites, and industrial toxins.

3. CASUALTY EVACUATION

Moving casualties in an urban environment can be difficult and time consuming. Moving a litter patient only a few hundred yards could take an hour or more. Ground evacuation vehicles will require heavy armor that can withstand small arms fire as well as rocket propelled grenades (RPG) and IEDs. Helicopter evacuation is difficult due to the tight operating environment. They too are susceptible to small arms fire and RPG's.

Special equipment requirements of CASEVAC

Simply finding casualties in an urban environment can be difficult. Explosions can cause buildings to crumble trapping patients inside. Vehicles can crash due to explosions, hostile fire or operator error. Events such as these may lead to complicated rescue efforts that require special equipment such as: axes, crowbars, jacks, ropes, collapsible litters and cutting tools.



Twentynine Palms, CA- Marines from 3rd Battalion, 5th Marine Regiment, carry a 'casualty' to safety in the urban assault lane of the training at Range 215. The MOUT facilities were built to replicate the actual environment that Marines will face when deployed.

4. OPERATING IN A MOUT ENVIRONMENT

The military commander must take many factors into consideration when planning MOUT operations. Two of which, terrain and rules of engagement, are discussed here:

Terrain

- Enemy observation positions are likely in high, isolated structures such as steeples or lone high-rise buildings.
- Assaulting forces can become quickly isolated, confused and cut-off by a tangle of unfamiliar structures.
- Small assaulting units are at a great disadvantage due to multiple floors, rooms, stairways, and doors. The enemy may make great use of these obstacles to inflict serious losses.



FALLUJAH, Iraq - A vehicle gunner with 1st Battalion, 6th Marine Regiment, looks out on the city as his unit patrols the back alleyways of Fallujah. The unit typically patrols the city streets several times a day, maintaining a strong military presence and searching for insurgents and illegal arms.

Rules of Engagement (ROE) - “US Forces and allies operate with restrictive ROE, reflecting the morals and values considered proper for a civilized society. Unfortunately, the tactical advantage will often go to the belligerent, who disregards or actively endangers the safety of civilians” (PHTLS 6th ed. P 586). Therefore, it is important to remember that every action has consequences. ROE may change from day to day, or from situation to situation. ROE are designed to:

- Avoid alienation of the local population.
- Reduce the risk of adverse world opinion.
- Preserve structures and facilities for future use.
- Preserve vital cultural facilities and grounds.

REFERENCE

Pre-Hospital Trauma Life Support, Current Military Edition

MOUT Review

1. Describe the characteristics of the terrain associated with MOUT.
2. Identify the predominant factors that lead to combat stress casualties in a MOUT environment.
3. List three sources of infectious disease that are found in a MOUT environment.
4. Identify some events that may lead to complicated CASEVAC efforts in a MOUT environment.