

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

FMST 202

Supervise Field Waste Disposal

TERMINAL LEARNING OBJECTIVES

1. Given water and hygiene items, **perform individual field hygiene to prevent injuries**, maintain health and preserve the fighting force to accomplish the mission. (HSS-MCCS-2024)

ENABLING LEARNING OBJECTIVES

1. Without the aid of reference, given a description or list, **identify the four types of field waste**, within 80% accuracy, in accordance with NAVMED P-5010 Manual of Naval Preventive Medicine. (HSS-MCCS-2024h)

2. Without the aid of reference, given a description or list, **identify the guidelines for latrine placement**, within 80% accuracy, in accordance NAVMED P-5010 Manual of Naval Preventive Medicine. (HSS-MCCS-2024i)

3. Without the aid of reference, given a description or list, **identify the types of field sanitation devices used for human waste disposal**, within 80% accuracy, in accordance with NAVMED P-5010 Manual of Naval Preventive Medicine. (HSS-MCCS-2024j)

4. Without the aid of reference, given a description or list, **identify the types of field sanitation devices used for liquid waste disposal**, within 80% accuracy, in accordance with NAVMED P-5010 Manual of Naval Preventive Medicine. (HSS-MCCS-2024k)

5. Without the aid of reference, given a description or list, **identify the types of field sanitation devices used for garbage disposal**, within 80% accuracy, in accordance with NAVMED P-5010 Manual of Naval Preventive Medicine. (HSS-MCCS-2024l)

6. Without the aid of reference, given a description or list, **identify the types of field sanitation devices used for rubbish disposal**, within 80% accuracy, in accordance with NAVMED P-5010 Manual of Naval Preventive Medicine. (HSS-MCCS-2024m)

OVERVIEW

Historically, in every conflict the US has been involved in, only 20% of all hospital admissions have been from combat injuries. The other 80% have been from diseases not related to battle, commonly referred to as Disease Non Battle Injury (DNBI). Excluded from these figures are vast numbers of service members with decreased combat effectiveness due to DNBI not serious enough for hospital admission. Preventive medicine measures are simple, common sense actions that any service member can perform and every leader must know. The application of preventive medicine measures can significantly reduce time lost due to DNBI. The intent of this lesson is not to make you preventive medicine experts. You will have access to them through the Environmental Preventive Medicine Units (EPMU) that deploy in times of war or conflict. This class is to give you knowledge of the basic skills necessary to employ safe preventive medicine practices for your Marines.

1. **WASTE**

Definition - all types of liquid and solid material excreted from the body as useless or unnecessary as a result of living activities of humans or animals.

Types of Waste

Human waste (black water): Liquid waste containing human urine, fecal matter and blood or body fluids.

Liquid Waste (Gray Water): Liquid waste containing water used for bathing or liquid waste from kitchen operation.

Garbage: Any kind of non-liquid organic materials resulting from food service operations.

Rubbish: Waste consisting of non-organic materials such as boxes, cans, paper, or plastics.

2. **GUIDELINES FOR LATRINE PLACEMENT**

When determining the location for latrines, give consideration to protecting food and water supplies from contamination as well as providing convenient accessibility.

- 100 feet from the nearest water source
- 100 yards feet from food service areas
- 50 feet from berthing areas

3. **FIELD SANITATION DEVICES USED FOR HUMAN WASTE DISPOSAL**

The devices for disposing human waste in the field vary with the tactical situation, length of stay, soil conditions, water table, weather conditions, availability of material and environmental regulations.

Cat Hole - used when troops are on the march, during short halts.

- Dug 12" in diameter and 12" deep
- Covered immediately after use

Straddle Trench (see figure 1) - used in temporary bivouac sites for one to three days. Four trenches required for 100 people.

- 1ft wide, 2 ½ ft deep, 4ft long
- Additional trenches will be 2 ft apart
- Wooden planks on sides for traction
- Each person covers their excreta after use

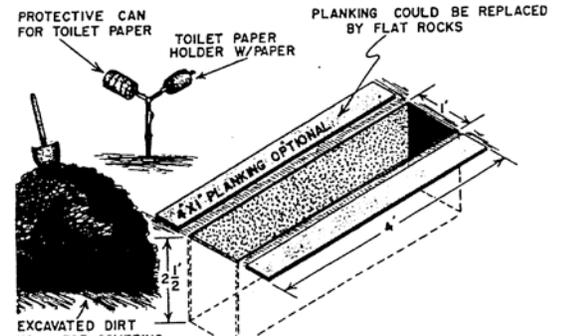


Figure 1. Straddle Trench

Burn Barrel Latrine (see figure 2 and 3) - the burn-barrel is a commonly used device for human waste disposal in the field. Best employed in areas where the water table is high or the ground does not permit digging. 8 seats required for 100 people.

- Encourage personnel to use other devices for urination since additional fuel is needed to burn urine and feces.
- Enclosed building constructed of plywood or other suitable material
- Contains 2 or 4 seats over 55 gallon drums cut in half
- Prime each drum with 3 inches of diesel fuel
- Burn out when drums are 1/2 to 2/3 full
- 4 parts diesel to 1 part gasoline until contents are covered
- Bury ashes at a depth of 12"



Figure 2. Burn-Barrel Latrine



Figure 3. Burn-Barrel Latrine

Wag Bag –Go anywhere toilet bag

Urine Soakage Pit (see fig 3) - temporary latrine used in sandy soils. One pipe can accommodate 20 men.

- Dug 4 ft square by 4 ft deep
- Filled with large rocks, rubble, bricks, etc
- Insert 6 pipes of one inch diameter at an angle
- Ventilation shaft at ends
- Cover ends of each tube with a funnel and mesh material

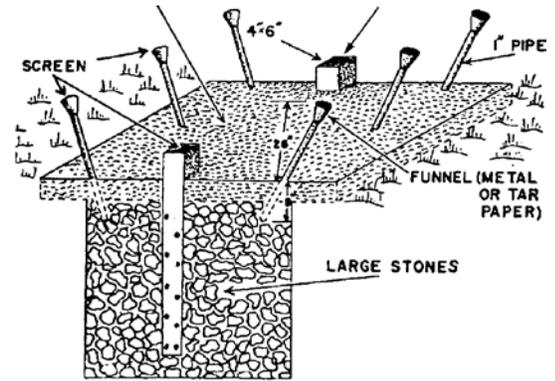


Figure 3 Urine Soakage Pit

Chemical Toilets - obtained as a contracted service. Requirements for chemical toilets:

- 1 to 15 personnel 1
- 16 to 35 personnel 2
- 36 to 55 personnel 3
- 56 to 80 personnel 4
- 61 to 110 personnel 5
- 111 to 150 personnel 6
- Over 150 Add 1 toilet for each additional 40 persons

4. **FIELD SANITATION DEVICES USED FOR LIQUID WASTE DISPOSAL**

Liquid waste disposal methods are primarily designed to maximize the evaporation of the waste. Using items such as rocks increases the surface area and allows the waste to dissipate quickly. Liquid kitchen or bathing waste disposal methods include:

Soakage pits - are constructed identical to the urine soakage pit (without tubes). One pit can accommodate 200 men.

Evaporation beds - are used in hot dry climates and are constructed in mounds and ridges.

5. **FIELD SANITATION DEVICES FOR GARBAGE DISPOSAL**

Every individual generates some type of garbage. The bigger the unit, the bigger the problem! It is important that you are able to make appropriate recommendations to the unit commander regarding the disposal of solid waste. The tactical situation must also be considered.

Garbage pit - the preferred method of garbage disposal for short overnight stops. A standard four feet by four feet pit will service 100 people per day.

Garbage trench - for longer stays, a garbage trench is used. The trench measures two feet wide by four feet deep and is extended as needed.

6. **FIELD SANITATION DEVICES FOR RUBBISH DISPOSAL**

Methods for rubbish disposal vary depending on the field situation. When tactical reasons do not permit the rubbish to be hauled off to a disposal site, the following methods can be used:

Garbage pit - for short stay rubbish is buried in pits with the garbage, taking care to flatten cans and break down boxes.

Incineration - in camps where the length of stay is expected to be over a week, rubbish is burned and the ash buried. Barrel incinerators are commonly used and must be at least 50 yards and downwind from the camp.

REFERENCES

Manual of Naval Preventive Medicine, NAVMED P-5010
Field Hygiene and Sanitation, MCRP 4-11.1

Supervise Field Waste Disposal Review

1. Describe the four types of waste.

2. How far should latrines be place away from the
_____ nearest water source
_____ food service areas
_____ berthing areas

3. Describe a burn-barrel latrine.

4. What are the two devices used for liquid waste disposal?

5. Describe a garbage pit.

6. Give three requirements when using incinerators.