APPENDIX B

FIELD SANITATION STANDING OPERATION PROCEDURE (SOP)

- 1. PURPOSE: This SOP establishes policies, procedures, and practices of Battalion and Company-sized unit Field Sanitation and Preventive Medicine Measures (PMM) under field conditions. This SOP has been electronically mailed to all Brigades to be tailored to their own units' mission. The customized SOPs should be maintained by Battalion Staff and Company-sized units' Field Sanitation Teams for reference.
- 2. REFERENCES:
 - a. AR 40-5, Preventive Medicine, Aug 1990
 - b. FM 21-10, Field Hygiene and Sanitation, Jun 2000
 - c. TB MED 81, Cold Injury, Sep 1976
 - d. TB MED 507, Prevention, Treatment and Control of Leat Injury Jun 2003
 - e. TB MED 530, Occupational and Environmental Health Food Service Santation, Oct 2002
 - f. TB MED 577, Sanitary Control and Surveillance of Field Water Supplies, Mar 1986
- 3. SCOPE: This SOP is applicable to all Company-sized units assigned or attached to your unit.
- 4. GENERAL: The Company/Troop/Battery Field Sanitation Team (FST) is responsible for a wide range of Force Protection tasks against Disease and Non-Battle Injury (DNBI). Historically DNBI has accounted for 80% of all hospital admissions. DNBI is a threat to soldiers in the field both in training and in real world operations. Reduction of DNBI is imperative to mission success both in combat and peace-keeping missions.
- 5. RESPONSIBILITIES:
 - a. Commanders: Commanders at all levels will promote general health and safety and ensure occupational and environmental health within their commands. Commanders will-
 - (1) Support the Preventive Medicine Program
 - 2) Provide adequate resources to implement the program and a trained and functional
 - (3) Take appropriate actions, based or recommendations of the Installation Medical Authority, to protect all personnel under their jurisdiction from disease and injury.
 - b. Units: Companies, troops, batteries and units of equivalent size are responsible for those Preventive Medicine Measures (PMM) that affect units as a whole or are beyond the resources of an individual soldier. FM 21-10/AFM 161-10 will be used as a guide with maximum use of company-level PMM therein. Commanders will ensure that their units conduct PMM. As a minimum, units deploying to the field will-
 - (1) Before eployment, ensure they have a deployable, trained and functional FST.
 - (2) Before deployment, incorporate PMM into SOPs.
 - (1) Have the capability to use pesticides and vegetation controls.
 - Bury and/or burn wastes to prevent the breeding of insects or rodents. Consult the environmental coordinator or PVNTMED personnel to ensure compliance with local environmental regulations and laws during field exercises.
 - (5) Protect food during storage and preparation to prevent contamination (TB MED 530)

- (6) Monitor unit water sources to assure adequate supplies and disinfection.
- (7) Arrange for maintenance of immunizations and prophylaxis.
- (8) Use other appropriate measures under FM 21-10/AFM 161-10.
- (9) Assure command supervision of individual PMM.
- (10) Request assistance for problems exceeding unit capabilities.
- (11) Deploy to the field with field sanitation equipment listed in FORSCOM Reg 700-2 (attached).
- c. Individual: The soldier will employ all protective measures possible. Each soldier, a minimum, will protect against-
 - (1) Heat incapacitation by drinking a sufficient volume of water at frequent intervals.
 - (2) Cold injury by wearing proper cold-weather clothing and frequently changing socks to keep feet dry, by careful handling of gasoline-type liquids, and by avoiding contact between skin and cold metal.
 - (3) Mosquito, fly, tick, and other arthropod-borne diseases by using insect repellents, netting, and insecticide aerosols; by taking approved chemoprophylaxis; and by wearing the uniform properly.
 - (4) Enteric disease by using iodine tablets whenever water quality is uncertain, by avoiding unapproved civilian food vendors, and by properly disposing of bodily wastes.
 - (5) Skin disease by washing the body as often as practicable.
- 6. What follows are the major areas of responsibility for the Field Sanitation Teams

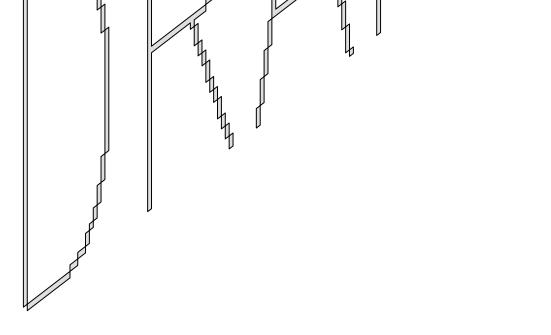
A. Field Sanitation Teams (FSTs):

- (1) Should consist of at least two soldiers, to include one NCO appointed on orders to the unit Field Sanitation Teams.
- (2) Field Sanitation Team members will be considered certified after completion of the Field Sanitation Team course at III Corps Troop School or 1st CAV EXATTMED Section's course.
- (3) Field Sanitation Team members should have at least 6 months of service remaining with their unit on the date of appointment.
- (4) FST supplies are to be properly stored as indicated in Appendix (separate storage of medical supplies, pesticides, and water purification supplies based on toxicity and potential cross contamination). FST notebook should include certificates, orders of tasking, and list of personnel part of the team.
- (5) Every FST is required to have a functional unit Field Sanitation Standing Operation Procedure, this document fulfills this requirement. When obtains or attached medical personnel are available they should be the priority personal for FST (IAW 40-5 14-3 PARA B1).

B. Field Food Service:

- (1) Field food service shall comply with the general provisions in TB MED 530 relative to personnel, product protection, preparation service equipment design and construction; and waste disposal. Certain field expedient methods are outlined in FM 21-10 and FC 8-6.
- (2) Specific requirements applicable to field food service only include:
 - a. Potentially Hazardous Foods (PHFs) shall not be retained as leftovers.
 - b. In the field three types of food can be served which are "A" rations, "rations or MRE's.
 - c. Only insulated food containers with inserts shall be used. Inserts shall be cleaned and sanitized prior to use. Containers shall be prechilled or preheated as appropriate prior to filling. Food shall be brought to safe temperatures (PHFs to be transported shall be prechilled and held at an internal product temperature or 40 degrees F or below or preheated to an internal product temperature of 140 degrees F or above.) prior to placement in containers. PHF held in insulated food containers for more than 4 hours should be discarded as food waste. Dining facilities should label their food with the date and time. Be sure to put food in covered insulated food containers.
 - d. Use of individual serving condiments is preferred in the field. Condiments, seasoning, and dressings shall be provided in individual packages, from dispensers of from containers protected from contamination. If bulk condiments are used ensure that they are held at appropriate temperature and are covered when not in use
 - e. Field pot, pan and utensil washing and sanitizing operations shall be conducted in the following manner:
 - 1. Scrape upnsils free of food particles.
 - a. Utilize a three compartment sink
 - Wash utensils in warm water containing soap or detergen
 - Rinse utensils in hot clear water.
 - Disinfect utensils by immersing them in clear water at 180 degrees F for 30 seconds. If a thermometer is not available, heat the water to the boiling point or disinfect utensils by immersing them in a chlorine-water solution for at least 30 seconds. Solution is prepared by using 1 level mess kit spoonful of calcium hypochlorite for every 10 gallons of water (250 ppm chlorine solution).
 - 5. Allow the utensils to air dry in a place where they are protected against dust, splash, and other sources of contamination.
 - f. Procedures to clean cooking and serving utensils when hot water is not available:
 - 1. Scrape wensils free of food particles.
 - 2. Wash wensils in water containing soap or detergent.
 - Rinse utensils with potable water.
 - sinfect utensils by immersing them in chlorine-water solution for at least 30 seconds.
 - 5. Allow the utensils to air dry in a place where they are protected against dust, splash and other sources of contamination.

- g. Individual cleaning of mess kit: In the field, each individual cares for his own mess kit. Proper washing is important; otherwise food particles will remain and become breeding places for disease microorganisms.
 - 1. Equipment required: Four corrugated cans or similar containers in a row, are required for washing mess kits. The first can is for scraping food particles from the mess kit. Enough water is placed each of the last three cans to allow at least one quart of water per soldier or one wash line of four cans is provided for every 80 soldiers. Large food service factities may require several washing lines. The second can contains hot water (120 degrees to 150 degrees F) with soap or detergent, the third and fourth cans contain clear water which is kept boiling throughout the washing period. A long-handled washbrush is also needed when a water container device is not available or cannot be improvised, the procedure for using a disinfectant, Food Service Solution should be followed:
 - a. Scrape the food particles from the mess kit into the garbage can.
 - b. Wash the kit in the first container of hot (120 degrees F to using the long-handled brush.
 - c. Rinse the kit in the second can of boiling clear water by dipping it up and down several times.
 - d. Disinfect the kit by immersing it in the third container of boiling water for 10 seconds.
 - e. Shake the kit to remove the excess water and allow it to dry in the air, then close the kit to keep out dust and vermin.
 - 2. Rewashing of mess kit prior to use: If a mess kit becomes soiled or contaminated between meals, it should be rewashed prior to as described above.
 - 3. When desirable to preheat utensils prior to the meal, a corrugated can with clear water may be placed their the start of the serving line. It is important that such water be maintained at a rolling both throughout the meal service period.



C. Field Water Supply:

1. The primary objective in supplying water is to provide potable water for drinking and culinary purposes regardless to the area or tactical situation and, when possible, to provide the same quality of water for bathing purposes. When conditions permit, it is desirable to remove color, turbidity, odor and taste. The field situation is very different from fixed installations where water is usually reated at a central source and distributed under pressure throughout the installation. In the field water is treated by means of Quartermaster operated potable equipment. Tank trucks, water trailers, collapsible fabric drums, and 5-gallon water cans are used to transport treated water to the using units. In emergencies, the individual may treat his drinking water with iodine or Chlor-Floc tables. When other treatment methods are not available, water should be brought to a vigorous boil.

2. Responsibilities:

- a. Unit Commander:
 - 1. Enforce water management.
 - Provide members of the command with required amount of drinking water.
 - 3. Ensure that all personnel are drinking adequate amount of water considering the environmental conditions and level of activity.
 - 4. Ensure that all personnel understand the danger of drinking unsafe water.
 - 5. Appoint and use a <u>Field Sanitation Team.</u>
 - 6. Ensure the Field Sanitation Team has been trained and can perform their duties.
 - 7. Ensure an adequate supply of Field Sanitation Team Material exist.
 - 8. Ensure the continued disinfection of potable water in the field.
 - Request approval to use alternative containers under emergency conditions.
- b. Unit Field Sanitation Teams (FSI) will:
 - Instruct unit personnel in the proper use of individual water purification techniques.
 - 2. Check the unit water supplies for chlorine residual at frequent intervals to ensure adequate residual.
 - Chlorinate water supplies when necessary.
 - Provide advise on protection of water trailer and other water storage containers from heat to keep the water as cool as possible in hot regions and from cold to keep it from freezing in cold regions.
 - Maintain adequate stocks of iodine/Chlor-Floc tablets and chlorination supplies IAW FORSCOM regulation 700-2.
 - 6. Ensure exposed surfaces of water containers remain uncontaminated or are decontaminated in the event chemical or biological agents or nuclear weapons are employed on the battlefield.
 - Inspect 400-gallon water trailers on a quarterly basis. Ensure all potable water containers (trailers, drums, and cans) are maintained in a clean and sanitized condition.

D. Field Waste Disposal:

(1) Field Waste includes all wastes (kitchen/medical/human/maintenance) generated under field conditions. If these materials are not disposed of properly in a camp or bivouac, filth-borne diseases such as dysentery (amoebic and bacillary), typhoid fever, para-typhoid fever, cholera, plague and other diseases might become prevalent. Flies, rats, and other vermin would increase and add to the individual's discomfort as well as endanger his/her health.

(2) Responsibilities:

- a. Unit commanders are responsible for the disposal of waste in their unit areas. When waste disposal facilities are not otherwise provided, the commander must arrange for the construction and operation of such facilities.
- b. Field Sanitation Teams should conduct periodic inspections of Area of Operations to ensure that Field Wastes are being properly handled and disposed of regularly. Communicate all deficiencies to their chain of command ASAP.

(3) Provisions for Latrines:

- a. The disposal methods for human waste will vary with the situations. At permanent and semipermanent camps, waterborne sewage systems like those of our cities are provided; away from these bases, units must provide these facilities. Methods and facilities for field water are:
 - 1. On the march, the "cathole" latring is used. This latring is a hole between one-half and one-foot deep which is covered with earth after use.
 - 2. In bivouacs and in overnight camps, urine and feces are disposed of by the use of straddle trench latrines.
 - 3. In temporary camps, deep pit latrines and soakage pits are constructed. Until the construction of deep pit latrines has been completed, strandle trench latrines may have to be used.
 - 4. Toops are occasionally required to camp within urban treas as in such cases the provision of chemical trilets may be required to obviate the necessity of damaging public parks and other areas objectionable to local officials. When necessary, chemical toilets must be provided to serve at least two percent of the unit strength on the day of arrival and four percent on the third day. After seven days the requirement should be regyaluated based upon the anticipated period of encampment. Daily panitary maintenance is required for chemical toilets.
- b. The following general rules apply to the construction of all types of latrines in the field:
 - To make sure that the food and water is protected from contamination, latrines are built at least 100 yards downwind from the food service facility and 100 feet from the nearest water source. The latrine should not be dug below the ground water level, or in a place where it may drain into a water source. Latrines should be built at least 30 yards from the end of the unit area, but within a reasonable distance for easy access. At night, if the military situation permits, they should be lighted. If a light cannot be used, a piece of cord, rope, or tape may be used to serve as a guide to the latrine.
 - Unless there is a natural concealment, a bush or canvas screen should be placed around the latring to provide privacy and a windbreak. In colder climates, the latrine may be enclosed in a tent and heated. For insect control, these shelters should be sprayed with an approved tasecticide at least twice weekly.
 - 3. The number of latrines should be sufficient to serve at least 4% of the males and 6% of the females at one time. Urinals should be provided in the male latrines to prevent soiling toilet seats.

- 4. On the outside of each latrine enclosure, a simple handwashing device is to be installed. This device must be filled with water, and soap must be available.
- Latrines must be policed every day. Unit details are assigned the duty of maintaining the latrines.
- 6. When a latrine has been filled to within 1 foot of the surface or when it is to be abandoned, it must be closed. The contents of the pit, the side walls and the ground surface (to a distance of two feet from the side wall) is sprayed with a residual insecticide. The pit is then filled to the ground level with successive, 3 inches layers of earth. Each layer is packed down and a layer is added. Then the latrine pit is mounded over with at least 1 foot of compacted earth and sprayed again with residual insecticide. The purpose of this method of closing is to prevent emergence of flies that may hatch in the closed latrine. The location of the latrine should then be plainly marked with a CLOSED LATRINE sign and dated, provided the tactical situation permits.

(4) Infectious Wastes:

Infectious wastes in the field, such as surgical dressings, tissues, and materials from infectious disease wards, should be disposed of by incinerator if the tactical situation permits. Land and sea burial are acceptable only when approved by the area surgeon.

(5) Kitchen Wastes:

- a. Kitchen wastes disposal facilities include soakage pits, grease traps garbage and rubbish pits, and incinerator. They should be located a least 30 yards from the food service facility, 100 feet from the nearest water source, and reasonably near the edge of the unit area.
- b. In temporary camp a soakage pit, constructed like a urine pit, normally will dispose of liquid kitchen wastes for a total of 200 soldiers. The difference between the construction of urine soakage pits and kitchen waste soakage pits is that a grease trap is substituted for the pipes or troughs used in the urine soakage pit. If the camp is used for several weeks, two kitchen waste soakage hits should be constructed. Each pit is used on alternate days, since the rest period helps to prevent clogging. A soakage pit that has become clogged should be closed and a new one constructed. When a pit is to be closed, it is covered with two feet of compacted earth and the covered site is marked with a sign abeled CLOSED SOAKAGE PIT and dated, provided the tactical situation permits.

E. Personal Hygiene:

(1) Although immunization exist against tetanus, smallpox, polio, typhoid fever, and cholera, there is no guarantee that they will be 100% effective. In fact, many diseases such as some colds, diarrhea, skin diseases, and sexually transmitted diseases to include AIDS, have no immunizations. Personal hygiene, coupled with preventive measures, such as food sanitation, water purification, arthropod control, isolation and quarantine, surveillance for carriers, and aggressive medical treatment cases, will markedly decrease the incidence of diseases.

(2) Responsibilities:

- a. The commander:
 - 1. Provides and maintains facilities, equipment and supplies as necessary for the practice of personal hygiene.
 - 2. Ensures that instruction to the personnel in personal hygiene is provided.
 - 3. Enforce the practice of personal hygiene by inspection.
- b. Field Sanitation Teams:
 - 1. Conduct instructions in personal hygiene.
 - 2. Carries out inspections in regard to personal bygiene
 - 3. Recommends corrections and improvements of personal hygiene as it is deemed necessary.
- c. The individua
 - Must understand and continually apply personal hygiene measures.
 - 2. Should see medical attention without delay if he becomes ill.
 - 3 Must avoid self-treatment or inauthorized treatment.
- (3) Military Health Rules:
 - a. Personal Cleanliness: Plain soap and water prevent many skin problems, such as heat rash, eczema, boils and impetigo. It is also effective in blocking the fecal-oral spread of hepatitis, silmonellosis, and other gastrointestinal diseases. Cleaning the body daily reduces the risk of louse, tick, and tlea infestation. Thereby, helps control related diseases, such as typhus, relapsing fever and plague. Proper dental care protects against dental cavities and numerous gum infections.
 - b. Proper Wearing of Uniform: Intelligent wearing of the uniform is an effective means of protecting oneself against malaria and other arthropod-borne diseases. As the climate dictates, it is important in preventing heat or cold injury. It is also important that socks are changed and proper foot care is maintained as the primary means of protection against immersion foot and other foot disorders.

F. Climatic Injuries:

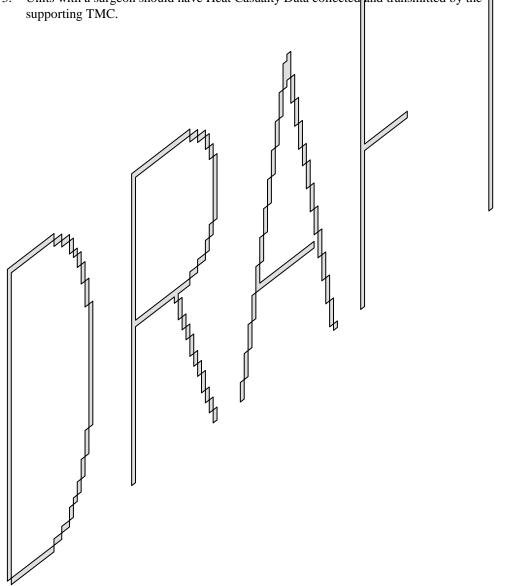
- (1) Heat Injury: In order to be able to fight and win under adverse conditions, soldiers must train under adverse conditions. At the same time, they must receive adequate protection against the elements, whether in training or under operational conditions. Heat injuries are preventable. The first consideration is the successful completion of the training or operation mission. Success depends on the prevention of all training injuries including those occasioned by climatic conditions. The hazards associated with extreme temperatures should be readily recognized by commanders and training it all levels. Through the exercise of sound judgment, injuries of all types can be prevented.
 - a. High Risk Individuals: Certain individuals and groups are at higher risk of becoming heat casualties. This includes personnel who have any of the following conditions:
 - 1. Are newly assigned and not yet acclimatized to heavy work in a hot environment.
 - 2. Perform unusually heavy work.
 - 3. Are obese or in poor physical condition.
 - 4. Medical conditions such as acute and chronic infections, fevers, reactions to immunizations, vascular diseases, diarrhea, heat rash or acute sun turn, use of diuretics, dehydration, lack of sleep, fatigue, and any condition affecting sweat secretion.
 - 5. Personnel with previous history theat injury.
 - b. Prevention: Preventive measures include-
 - 1. Diet-liquid and salt requirements increase with temperature and commanders will ensure that adequate supplies of water are available to their troops. In times of extreme heat stress, follow the guidelines of the WBGT INDEX. The routine use of salt tablets is medically contributionated and is forbidden. Soldiers will get sufficient salt form eating all their meals.
 - 2. Unit level heat stress monitoring
 - Wet Bulb Blobe Temperature (WBGT) Index. The WBGT Index serves as a guideline for making recommendations to the commanders when hot weather conditions are hazardous for the troops. Each TO&E unit should procupe and use a Wet Bulb Globe Temperature (WBGT) Kit (NSN 6665-00-159-2218)
 - . Training and work modification
 - c. Responsibility: It is the commander's responsibility to-
 - 1. Train soldiers to avoid, recognize, and treat heat injuries.
 - 2. Perform timely heat stress readings or obtain heat category information through command channels.
 - 3. Determine when to implement the training modification after considering the heat stress category and the requirements of the training mission.
 - 4. Ensure proper acclimatization of newly assigned personnel not commonly exposed to heat.
 - d. NBC Training:
 - Commanders should use cooler early morning and late evening hours for MOPP training during the summer months.
 - 2. MOPP gear or body armor adds at least 10 degrees F to the WBGT index.
 - e. Reporting of Heat Injuries:

1. All heat injuries, regardless of their disposition, will be reported.

Usually done by medical personnel.

- 2. Any heat casualty that necessitates dehydration shall be reported to the unit surgeon, and the information will include:
 - name
 - b. rank
 - c. unit
 - d. diagnosis
 - disposition

3. Units with a surgeon should have Heat Casualty Data collected and transmitted by the

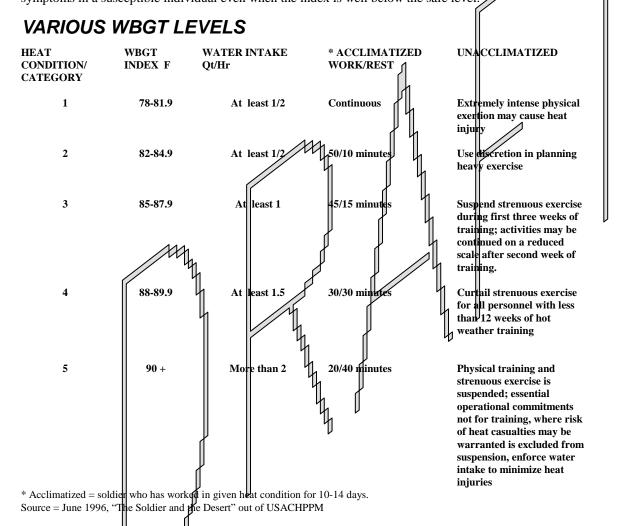


WBGT INDEX

Heat Stress conditions are established by using the Wet Bulb Globe Temperature Index (WBGT). This index combines shade, air temperature, radiation, humidity and wind into a single value to be used as a guide for outdoor activity.

When the WBGT is measured, and a hazardous heat stress condition is established all units should be notified. Heat stress conditions serve as a good general guide to the unit commander. However, significant differences in stress conditions may exist between measuring stations and the units open area.

It is not necessary for the WBGT to be above 82 degrees for heat injury to occur. Heat stress to the body may cause symptoms in a susceptible individual even when the index is well below the safe level.



Personnel should not wear the protective equipment if the WBGT exceeds 84 degrees. The division or brigade surgeon should be consulted prior to training in body armor or chemical, biological protective equipment if the WBGT exceeds 84 degrees.

HEAT CRAMPS:

Muscle cramps (usually in the abdomen, but also extremities).

- 1. Move to a cool shaded area.
- 2. Loosen clothing.
- 3. Give water to drink.
- 4. If symptoms continue or persist, seek medical help.

HEAT EXHAUSTION:

Headache, Dizziness, Shortness of Breath, Paleness, Sweating and Vomiting GET PATIENT TO THE NEAREST MEDICAL FACILITY. TIME IS IMPORTANT.

HEAT STROKE:

Skin hot and dry or profusely sweating, very high body temperature. Mental confusion. Bitarre activity. Extreme weakness. Loss of consciousness. Convulsions. HEAT STROKE IS A

MEDICAL EMERGENCY!!

WHILE WAITING EVACUATION:

- 1. Keep the patient in a shady area and as cool as possible. Open clothing
- 2. Cool body with water and fanning.
- 3. Give cool wanted drink, if conscious. SIP up to one quart water slowly
- 4. Treat for shock, to include administering W bags to patient if available.

TO MAINTAIN PHYSICAL PERFORMANCE!

- 1. Depending on the heat, you may need to drink ½ to 2 gallons of water gallons or more per day in hot dry climates.
- 2. Take frequent small drinks, since they are more effective than all at once.
- 3. Drink extra water before starting any mission or hard work.
- 4. Drink cool water (50 to 55 degrees Fahrenheit)
- 5. Replace salt loss by cating three (3) rations per day.
- 6. As the WGT increases, rest periods must be more frequent, work rate X and loads reduced.
- 7. Use water as a tactical weapon, and maintain top efficiency by drinking every hour.

2. COLD INJURIES

1.

2.

3.

4.

All cold weather injuries are preventable.
a. Attention to the welfare of troops and to the recognition of cold hazards will allow commanders and leaders to ensure that their personnel are adequately protected.
b. Cold injuries often occur in geographical areas such as Central Texas, where the formally mild, but rapidly changing weather can lull personnel into taking inadequate protective measures.
High Risk Individual - Certain individual and groups are at higher risk of becoming a cold weathe casualty. These include:
a. Personnel who have suffered a previous cold injury.
b. Caucasians from warmer climates.
c. African Americans, depending on geographical origin.
d. Individuals under added stress of : injury, fatigge, or lack of food.
e. Individuals taking medications which decrease peripheral circulation.
f. Individuals consuming alcohol.
Training Modification- It should not be necessary to modify training schedules due to cold weather. Modifications are limited to special steps to prevent personal injury. These include: a. Adequate clothing should be provided and worn according to the temperature and wind chill. Adequate individual cold weather training to ensure that individual soldiers put on and remove clothing, says to avoid chilling and conversely, perspiration which destroys the insulation value of clothing. Measures to prevent socking by rain or surface water. The buddy system. Reporting Cold Injuries: (Organic medics should report (this includes heat reports as well). Any cold injury shall be reported to the unit surgeon, to include: 1. name 2. rank 3. unit 4. diagnosis 5. disposition
b. Units without a surgeon should have Cold Casualties Data collected and transmitted by the supporting TMC.

COLD FACTS

COLD FACTS FOR KEEPING WARM

- 1. BE ALERT: Do not let weather surprise you.
- 2. MAINTAIN HEALTHY HABITS: Exercise good foot and sock care. Avoid immobilization. Smoking and alcohol increase danger of cold injury. Maintain an adequate diet.
- 3. HAVE PROPER CLOTHING: Wind may be calm but freezing danger is great when a person is exposed in a moving vehicle, under helicopter rotors or in prop blast. It is the rate of relative air movement that counts, and the cooling effect is the same whether you are moving through the wind or it is blowing past you. Effects of the wind will be less if a person has slight protection for exposed flesh (e.g. light gloves on hands, parka hood, a shielding for the face).
- 4. WEAR YOUR CLOTHING: Clean, loose, and dry. Overheating should be avoided.

5. COMMON SENSE: There is no substitute for it. The wind chill table serves as guide to the cooling effects of the wind on bare flesh when a person is first exposed. General body cooling and many other factors affect the risk of freezing injury.

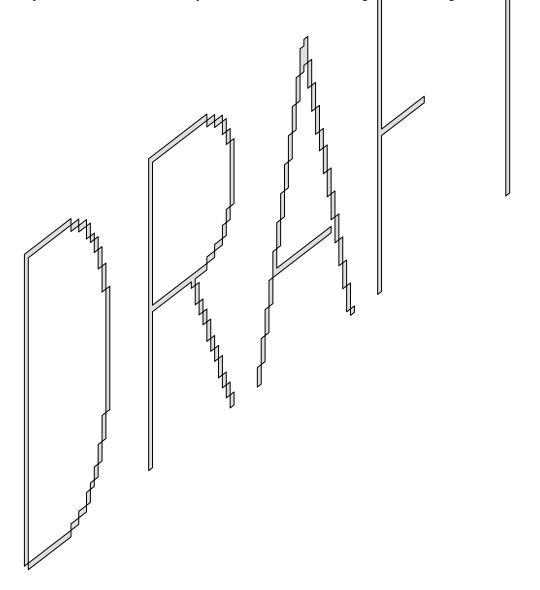
RECOGNITION OF COLD INJURY

1. NON-FREEZING:

- a. Chilblains: Painful swelling and/or sore caused by exposure to high humidity at temperatures above 32 degrees F.
- b. Immersion Foot: Aching and stinging pain with redness of pallor swelling, caused by prolonged immersion in water usually for 12 hours more; similar condition known as trenchfoot is associated with protonged wearing of wet socks and boots.
- 2. FREEZING:
 - a. Frostbite: Aching, tingling, stinging, and gradual numbing sensation of the skin is initially red before turning waxy white; caused by exposure to cold below freezing usually under conditions of decreased humidity.
- 3. HYPOTHERMIA:
 - a. Hypothermia: Pale skin dizziness, disorientation, exhaustion, drowsiness and dropping of internal body temperature from the normal degrees F. Can bring fatal consequences caused by the decrease of in core body temperature when exposed to cold.
- 4. FIRST AID:
 - a. For tostnip (mild blanching of the skin) placing the frost-nipped fingers next to the body is usually all that is needed. Any suspected frostbite, immobilize and remove constrictive clothing; do not run or use snow ointments/ slaves; elevate the limb slightly to control swelling and evacuate to the nearest medical treatment facility immediately. Do not allow patient to drink alcohol or smoke cigarettes.

AVOID FREEZE-THAW-REFREEZE

- 1. AMBIENT AIR TEMPERATURE GUIDELINES:
 - a. 32 degrees F or warmer-Little risk with proper dry clothing.
 - b. 32 degrees F to 20 degrees F- Little risk with normal winter issue, if clothing is dry.
 - c. 20 degrees F to 16 degrees F-Risk as above except physically inactive personnel need shortened exposures, or warming tents.
 - d. 15 degrees or colder- High risk even with normal winter issue. Continuous close supervision required. Extreme conditions may warrant curtailment of training without arctic gear.



APPENDIX A: INDIVIDUAL PREVENTIVE MEDICINE COUNTERMEASURES

- 1. Prevention of Heat Injuries
- 2. Prevention of Cold Injuries
 - (a.) Wear uniform as directed by commander.
 - (b.) Wear clothing in loose layers and avoid tight clothing and underwear.
 - (c.) Keep clothing clean and dry. Remove or loosen excess clothing when working heated area to avoid sweating.
 - (d.) Avoid spilling fuel on clothing or skin.
 - (e.) Keep the body warm by exercising muscles, toes, feet, fingers and hands.
 - (f.) Protect the feet by keeping the socks dry and clean. Change wet and damp socks as soon as possible.
 - (g.) Avoid tight socks and boots. Do not stovepipe, tape or tie BDU parts.
 - (h.) Wear overshoes to keep boots dry.
 - (i.) Protect hands by wearing gloves (with inserts). Also, a void skin contact with snow and bare metal.
 - (j.) Use the buddy system in watching each other for cold in uries.
 - (k.) Do not allow soldiers to steep in vehicles with the engine running or in an enclosed area where open fire is burning to prevent carbon monoxide personing.

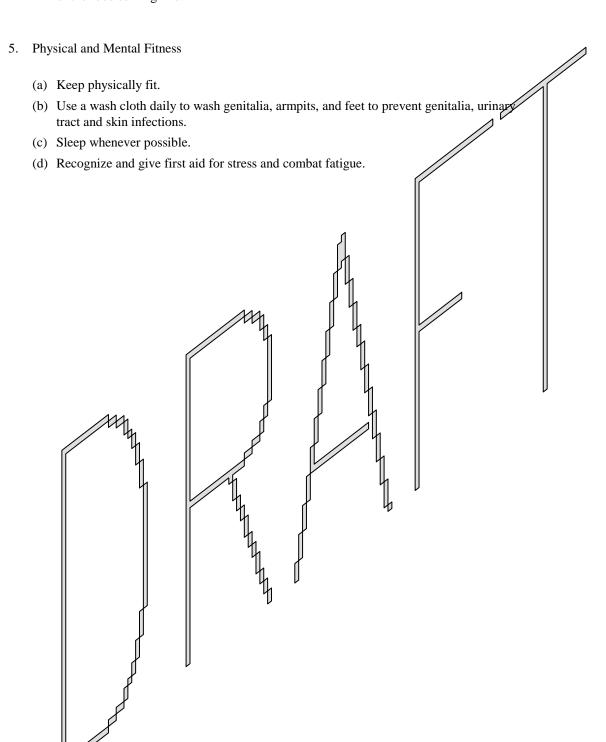
3. Biting Insects

- (a) Use insect repellent on all exposed skin (face, ears, arms, and hands). This should be done every 4 hours provided that the soldier stays dry
- (b) It sweating or contact with water is unavoidable apply a thick coat immediately upon exposure and every 2 hours if you continue to sweat.
- (c) Insect repellent should be applied where clothing fits tightly, such as upper back, buttocks and ankles.
- (d) Wash uniform frequently to remove insects and their eggs. Also, repair all tears and holes in holes in your uniform.
- (e) Where the insect threat is high, blouse pants in boots and completely lace boots. Tuck undershirt in at the waist.

Diarrhea

- (a) Drink only water that has been treated and meets the prescribed field standards for chlorine residual of 5 ppm (parts per million).
- (b) Consume only those food and drink products which have been approved by medics, preventive medicine, or the veterinarian service.
- (c) Wast hands after using the latrines and before touching food.
- (d) Insure that mess kit is properly washed and sanitized before and after each meal.
- (e) Dispose of waste as directed by your commander to prevent flies from spreading germs to food.

(f) Insure that a hand-washing device is available at every latrine and at the starting point of the food serving line.



APPENDIX B: Unit-Level Countermeasures

1. Field Sanitation Team

As a minimum units deployed to the field will provide a field sanitation team to oversee the unit-countermeasures (AR 40-5, para 14-1).

2. Plan for Heat

- (a) Insure that prevention, recognition and treatment of heat injuries training is conducted
- (b) Obtain weather forecasts in advance of scheduled training.
- (c) Obtain that an adequate supply of potable water is available (up to 4 gallons per day per soldier just for drinking). Issue second canteen to soldiers in hot weather operations.
- (d) Know the location of water distribution points.
- (e) Insure that trained medical support is available for treatment of possible heat injuries.
- (f) Obtain heat condition information and comply with unit SOP.
- (g) Enforce individual countermeasures.

3. Plan for the Cold

- (a) Insure that cold injury training is conducted.
- (b) Obtain weather forecast for time/area of training mission.
- (c) Insure that all soldiers have their cold weather gear and that it is in a serviceable condition and properly fitted.
- (d) Insure that warming tents or areas are available at training sites.
- (e) Insure that has rations and beverages are available.
- (f) Insure that sufficient drinking water is available
- (g) Insure that trained medical support is available for treatment of possible cold weather injuries.
- (h) Determine, understand, and use the wind chill factor chart.
- (i) Identify those soldiers who are at high risk for cold weather injuries.
- (j) Enforce individual countermeasures

4. Plan for Biting Insect Threat

- (a) Obtain information on those biting insects which threaten the health of the soldier in the area of deployment or training.
- (b) Conduct preventive medicine countermeasures training.
- (c) Insure that the field sanitation team materials (AR 40-5, Table 14-1) are available and can be replectished.
- (d) Insure that immunizations, appropriate to the area of deployment, are current.
- (e) Insure that laundry and bathing facilities are available.
- (f) Enforce individual countermeasures.

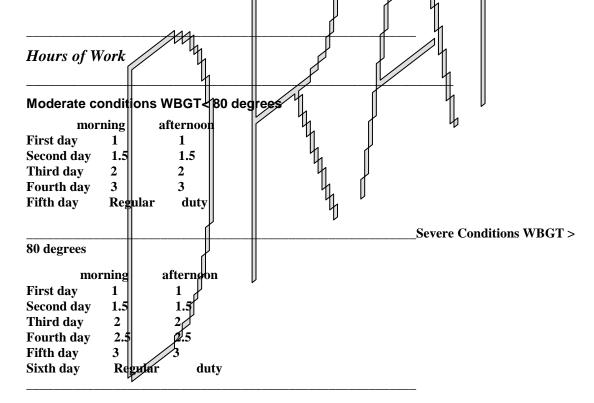
5. Prevention of Diarrhea

(YOUR UNIT) FIELD SANITATION STANDING OPERATION PROCEDURE (SOP)

- (a) Make sure that all water comes from an approved source.
- (b) Insure that the unit has adequate supply of the following items:
 - 1. Iodine Purification Tablets
 - 2. Chlorination Kits
 - 3. Bulk Chlorine
- (c) Insure that all water containers are inspected prior to use and that the chlorine residual in the water is maintained at 1 ppm (parts per million) at all times.
- (d) Insure that potentially hazardous foods are maintained at a safe temperature of 40 degrees or below for cold food items and 140 degrees for hot food items.
- (e) Insure that food service personnel are inspected daily for evidence of communicable diseases.
- (f) Insure that food consumed in the field comes from an approved food source.
- (g) Supervise the use of the mess kit laundry.
- (h) Insure that food service personnel have and use handwashing devices
- (i) Insure that waste is disposed of LAND C 8-6 and FM 21 10
- 6. Physical and Mental Fitness
 - (a) Insure that leaders at all levels recognize the benefits of physical fitness.
 - (b) Take a positive approach to physical films. A physically fit soldier is less likely to be a combat loss from disease.
 - (c) Sleep discipling should be enforced
 - (d) During "continuous operations" set shifts and rotate jobs to allow everyone at least 4 hours of uninterrupted steep per bour period, especially supervisors and commanders.

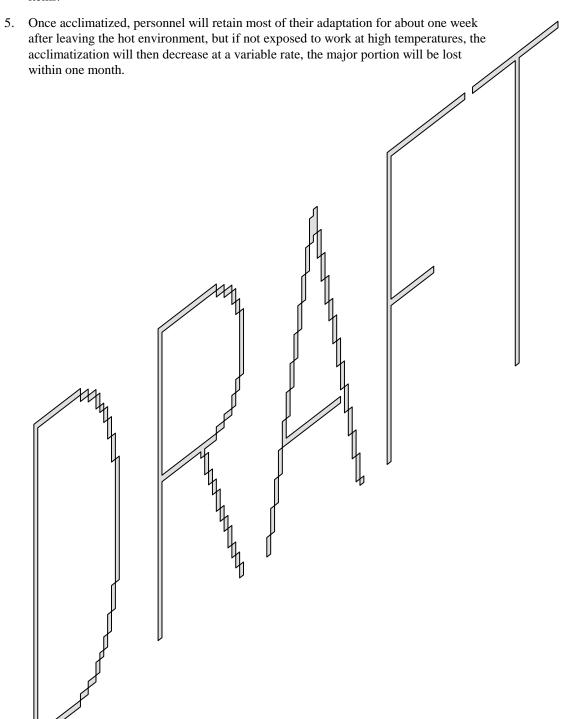
APPENDIX C: FACTS ABOUT HEAT ACCLIMATIZATION:

- 1. Training programs for personnel who are climatically and/or physically unaccustomed to heat should be limited in intensity and time. A period of at least two weeks with progressive degrees of heat exposure and physical exertion should be allowed for about 70% of acclimatization. If soldiers are required to perform heavy physical work before being properly acclimatized, the work is poorly performed, and the risk of heat injury and disability is high. The better the physical condition the quicker acclimatization is completed.
- 2. Acclimatization to heat begins with the first exposure, and is developed to about 45-52% by the end of the first week. Individuals who are unusually susceptible to heat will require additional time for acclimatization. Full acclimatization is attained most quickly by graded, progressively increasing work in the heat, and can be achieved by as little as two 50 minute periods of work in the heat each day. The task should require cardiovascular endurance work, e.g., jogging, running in place, rather than muscle work such as pushups. Resting for three or four days in the heat, with activity limited to that required for existence, results in only partial acclimatization; physical work in the heat must be accomplished for development of full acclimatization to that work level in a given hot environment.
- 3. If it is necessary that work be accomplished during the period of acclimatization, advantage should be taken of the cooler hours in accomplishing the work. A schedule should be established which provides increasingly longer work periods alternating with rest periods. If necessary, two details can be arranged to work in sequence. The example schedule given below is based on work equal to that of marching with a 20-pound lack at a rate of 2.5 miles per hour. During the midday period the soldiers should rest and keep in the shade s much as possible. Peak WBGT conditions usually occurs between 1200 and 1400 hours.



Recommended for soldiers in fair or worse physical condition; with some care very fit individuals should do double this schedule and be able to perform regular duty on 3^{rd} or 4^{th} day.

4. Adequate water must be provided during the acclimatization period as well as other items.



APPENDIX D: SHIPMENT, STORAGE AND HANDLING OF FIELD SANITATION TEAM MATERIALS.

1. PURPOSE. Provide army personnel with procedures to safely transport, store and handle Field Sanitation Team Materials.

2. SCOPE. Applies to all Army units transporting, storing or handling Field Sanitation Materials.

3. PROCEDURE.

a. Shipping, storage, handling and protective clothing and equipment requirements are provided for the following Field Sanitation Materials.

1. NSN 6819-00-255-0471, CALCIUM HYPOCHLORITE, 6 OZ. bottles, (civilian number) UN number 1748, Federal Specification O-C-114.

Transportation Requirement: Contact Transportation Division for assistance and specifications.

Transportation Information: DOT Proper Shipping Name CALCIUM HYPOCHLORITE. DOT Hazard Class-OXIDIZER.

Handling and Storage: Calcium Hypothlorite is an oxidizer and will readily supply oxygen to support combustion when combined with organic materials. 70% grade may decompose violently if exposed to or direct sunlight. Gives off poisonous gases above 150 degrees Fahrenheit.

Protective clothing and equipment for IST users: Duty uniform, eye and respiratory protections.

recautions: Corrosive to ferrous metals. Reaction with fuels may be violent.

2. NSN 6840-00-810-6396, Disinfectant, Food Service 10 per pack UN number 3019.

Transportation Requirements: Wor regulated.

Protective clothing and equipment for FMT users: Duty uniform and eye protection

Precautions: None

3. NSN 6840-00-753-4973, Rodenticide Bait, Anticoagulants, packs 5 pounds/can, (civilian number) UN number 2769, Federal Specification packs 5 LB/can, UN number 2769, Federal Specification O-B-500.

Transportation Requirement: Contact Transportation Division for assistance and specifications.

Transportation Information: DOT Proper Shipping Name INSECTICIDE, DRY, N.O.S. DOT Hazard Class-POISON B.

Handling and Storage: Store in dry area. Protect from physical damage. Keep container closed when not in use.

Protective clothing and equipment for FST and users: Duty uniform, eye protection and gloves.

Precautions: Wash hands thoroughly after handling and before eating or smoking. Avoid breathing dust when handling. Follow directions on container for use.

4. NSN 6840-01-284-3982, Insect Repellent, Personal Application, packed 2 oz to polyethylene bottle, (Civilian number) Federal Specification O-I-503, UN number 1993.

<u>Transportation Requirement: Contact Transportation Division for assistance and specifications.</u>

Transportation Requirement: Contact transportation Division for assistance and specification.

Transportation Information: DOT Proper Shipping Name INSECTICIDE, LIQUID. N.O.S. DOT Hazard Class, FLAMMABLE LIQUID.

Military air shipment: Same hazard as above.

Handling and Storage: Store in dry, well ventilated, low fire risk area. Protect form heat, shock, friction. Keep containers closed.

Precautions: For external use only. Use only in accordance with instructions on container. Initially packaged 2oz/polyethylene bottle, packed 3 rows of two high (48 total) into fiberboard box (PPP-B-636) overpacked into plywood box (PPP-B-601).

5. NSN 6840-01-210-3392, Insecticide, Chlorpyrifos 42 4, 40 ml bottles, 12 per box, UN number 1993.

Transportation Requirement: Contact Transportation Division for assistance and specifications.

Transportation Information: DOT Proper Shipping Name-CHLOR YRIFOS, DOT Hazara Class ORM-A

Military air shipment: Same as above

Handling and storage: Store in a cool, dry well ventilated, low fire risk area. Protect containers form physical camage: Avoid any physical contact. Keep containers tightly closed. Toxic, irritating gases may be formed when heated.

Protective Clothing Equipment for LST and users: Duty uniform, eye and respiratory protection.

Precautions: Avoid skin and eye contact. Use proper personal protective clothing. Do not smoke or eat in the work area and wash hands after handling.

6. NSN 6840-01-067-6674 Insecticide, D-Phenothrin X 12 oz each (aerosol can), UN number 1950

Transportation Requirement: Contact Transportation Division for assistance and specification.

Transportation Information: DOT Proper Shipping Name INSECTICIDE, LIQUEFIED GS. DOT Hazard Class-NONFLAMMABLE GAS.

Military air: same as above.

Handling and Storage: Store in a cool dry, well ventilated area away form heat or open flame. Do not puncture or incinerate. Use in accordance with label only.

Protective clothing and equipment for FST and user: Duty uniform and eye protection.

Precautions: Avoid contamination of food. Never throw container in fire or incinerate.

- 1. Field Sanitation Team Materials (except NSN 6810-00-255-0471 Calcium Hypochlorite) may be stored together in a sealed medical chest or footlocker. Materials should be left in their original package whenever possible. If removed from the original package, the materials should be packed into a fiberboard or plywood box there placed into the sealed medical chest or footlocker.
- 2. NSN 6810-00-255-0471, Calcium Hypochlorite, must be stored separate from organic materials. Store calcium hypochlorite in individually packaged packed plastic zip lock bags. The individually packed zip lock bags should then be placed into an ammunition can painted yellow and labeled "Calcium Hypochlorite Class III Oxidizer".

Additional storage and transportation requirements are published in Title 49, Code of Federal Regulations (CFR), AR 385-55, and TM 38-259.

Field Disinfection of Water

<u>NOTE:</u> Always check for chloring regardless of the source. When the chlorine residual is adequate, no disinfection is necessary. However, if the residual is low, disinfect the water yourself using the above procedure.

A. Canteen (1 quart)

<u>Concept:</u> Water can be collected in a soldier's canteen, and made safe using iodine tablets. (Water Purification Tablets, VSN 6850-00-985-7166)

2. Procedure:

- a. Check the water (Always use TWO iodine tablets regardless of temperature or clarity of water).
- b. Add TWO iodine tablets.
- c. Wait 5 minutes (Allow time for the tablets to dissolve.)
- d. Shake the canteen (Mix the contents well.)
- e. Disinfect threads (Loosen the cap; turn canteen upside down)
- f. Wait 25 more minutes (Allow time for the iodine to kill pathogens microorganisms.)
- 3. Note: If iodine tablets are not available...
 - a. Boil water (Bring to a roll for at least 15 seconds)
 - Iodine (Tincture) (Add 5 or more drops to each canteen)
 - c. Bleach (Clorox) (Add 2 or more drops to each canteen)
 - d. Chlorine ampules (Break one into a canteen cup; fill the cup with water to the bottom rivet and stir; pour a capful of the slurry into each soldier's canteen and wait ten minutes.)

B. Water cans (5 gallons)

1. <u>Concept:</u> Water in standard 5 gallon cans can be made safe using chlorine powder. (Calcium Hypochlorite, 6oz jar, NSN 6810-00-255-0471).

2. Procedure:

- a. Dissolve 1 half-gram spoonful in one-half canteen cup of water.
- b. Pour ½ of solution into a 5 gallon can (Remainder can be poured into second can)
- c. Disinfect the threads (Loosen cap; turn can upside down and shake)
- d. Wait thirty minutes (Allow time for chlorine to kill parageogenic organisms)

C. Water trailer (400 gallon)

1. <u>Concept:</u> If the unit's field sanitation team tests the trailer and fails to find a measurable chlorine residual, the water in the trailer can be made safe using chlorine powder. (Calcium Hypochlorite, 602 jar, NSN 6810-00-255-0471).

2. Procedure:

- a. Dissolve 5 half gram spoonfuls in one-half ganteen cup of water.
- b. Pour into trailer.
- c. Flush the trailer taps (Let each run for several seconds
- d. Wait 10 minutes (Allow time for chemical reactions)
- Flush the trailer taps again.
- f. Theck residual (Use stair-step color comparator from chlorination kit).
- g. If water is at 1 ppm chlorine, then wait an additional 20 minutes before consumption.
- 3. Note: Most water obtained from the unit's water trailer will be potable and safe. However problems occasionally occur, for example...
 - a. So diers sometimes have difficulty finding an engineer water point; to avoid embarrassment, trailers are filled at unapproved sources assuming that no one will notice.
 - b. Hingineer water points sometimes make mistakes while treating water.
 - c. Thlorine dissipates with time and temperature. If water sits in the trailer too long, residual chlorine will get weaker and weaker until it no longer protects.

APPENDIX F: Sanitary Maintenance of Water Trailers by Field Sanitation Teams

1. Reference:

- a. AR 40-5, Preventive Medicine, August 1990.
- b. TB MED 577, Sanitary Control and Surveillance of Water Supplies at Field Installations, March 86.
- c. TM 9-2330-267-14, Operator, Organizational, Direct and General Support Maintenance Manual for Trailer, Tank: Water, 400 gallon 1 ½ ton, 2 wheel M149, M149A1, February 1983.
- d. FM 21-10, Field Hygiene and Sanitation, June 2000.
- **2. Purpose:** To provide guidance for the sanitary maintenance of water trailers by (your unit) unit's Field Sanitation Teams.

3. Responsibilities:

- a. Division Surgeon, your unit, will evaluate compliance during Field Training Exercises.
- b. Commanders should enforce regulations and procedures which govern the sanitary maintenance of water trailers
- c. Field Sanitation Teams will inspect and supervise cleaning and disinfection of unit water railers.
- d. Field Sanitation Teams will inspect their water trailers quarterly and maintain a record of all inspections conducted. This responsibility is inspectable by the Preventive Medicine Section of the Division Surgeon's Office

Inspection Criteria

- a. Overall exterior appearance will present a good state of repair, that is no structural damage.
- b. Interior Surface
 - (1) Staining caused by natural water impurities (iron, manganese) is permitted as long as it does not interfere with disinfection. Staining caused by improper handling or storage of products other than potable water (grease or oil products, improper painting, etc.) is prohibited. Stains in the latter case should be cleaned and if necessary, sanded, painted and disinfected.
 - (2) Cracks are the most commonly observed interior surface defect of water trailers. Microbiological growth surfaces present themselves in these imperfections.
- c. The manhole cover will seal effectively to keep contents from being contaminated. Pressure relief valve will operate effectively. Rust in the manhole cover area is <u>prohibited</u>. Sealing gasket cracks indicating dry rot (chunks missing, not properly attached to cover assembly) are prohibited.
- d. The drain plug will be operable and removable without excessive effort. Remove and clean plug and plug mount, draining after use.

- e. The dispensing spigots will be clean and operate effectively without excessive leaking. Spigots on each side of the trailer will be operable. Covers over the spigots will open and close effectively to keep dust and dirt out. Spot painting of the interior of the spigot is discouraged. The "T" handle dispensing water from the trailer to the spigots will operate (open and close) freely.
- **5. Frequency of inspections:** An inspection will be performed on all water trailers BY THE FIELD SANITATION TEAM no less than 5 days prior to dispatch of the trailer for the purpose of transportation or storage of potable water. Every water trailer will be inspected by the Field Sanitation Team, at a minimum of once every 90 days, whether it is dispatched or not.

6. Cleaning and sanitizing of water trailers:

- a. Prepare a mild soap solution.
- b. Thoroughly wash the inside of the tank with a long handle scrub brush (NSN 7920-00-061-0038).
- c. Rinse the tank with clean water to complete premove the spap solution.
- d. Sanitize the water tank using liquid laundry bleach

(NSN 6810-00-900-6276). Four gallons (15 liters) of the liquid laundry bleach should be added to the filled water tank and let stand for no less than all pours, for proper sanitation.

- e. Thoroughly rinse the water tank with clean warm water (120 degrees F or 49 degrees C) to remove the liquid laundry bleach.
- 7. Water disinfection procedures: Although water obtained from Engineer Water Supply Points or from Garrison is already thoroughly treated, it does require further disinfection the chlorine residual reads below ppm.

Maintenance:

- a. Unit level main enance entails inspection request, the ordering of faucets, seals, drain plugs valves and other similar accessories which can be replaced or installed at the unit.
- b. Division Maintenance is required if the tank is damaged. The tank should be turned in to the Division Maintenance Battalion.

APPENDIX G: Inspection Standards and Evaluation Criteria

General: The functional area of field sanitation at the company level consist of the unit field sanitation team. The equipment, personnel, and administration of the company/battery Field Sanitation Team will be evaluated.

References:

- a. AR 40-5, Preventive Medicine, Aug 1990.
- FM 21-10, Field Hygiene and Sanitation, Jun 00.
- c. FC 8-6, Unit Field Sanitation Team, JUL 86.
- **3.** Rating Criteria: The Field Sanitation Team Inspection will be conducted by the Division Preventive Medicine Section. Field Sanitation Team inspections consist of a lay-out of all field sanitation team equipment/supplies and administrative material. The

inspection team will have full access to all team members at the appointed, arranged inspection time. The battalion /company will be evaluated in the following areas: equipment accountability, and serviceability, publications, supply requisitions, SOP content and knowledge of required equipment use IAW FC 8-6. The FST inspection does include inspection of unit water trailers by preventive medicine. It is impossible to delineate every discrepancy in all areas of the FST Inspection. Those items which, in the opinion of the inspector, constitute a deficiency for an inspection area shall be reported as such. Comments or disagreements should be directed to the Preventive Medicine Section OIC and not the inspector. All deficiencies noted will be corrected within 30 days post inspection.

The Technical Assistance Visit will consist of an evaluation of all field sanitation team equipment/supplies and administrative material. A Requested Technical Assistant Visit will consist of an evaluation of requested areas only. The results of the Technical Assistance Visit will be given to the initiator of the request. The evaluation team will have full access to all available field sanitation team members at a previously arranged. The company will be evaluated in the following areas: Equipment accountability, and serviceability, publications, supply requisitions, SOP content and knowledge of required equipment use IAW FC 8-61. The objective of the Technical Assistance Visit is to provide the commander an assessment of the strengths and weaknesses of the unit field sanitation program. All deficiencies noted will be corrected within 30 days post evaluation or before any field sanitation inspection.

