

## **8. Basic Field Skills.**

### **8-1. Field Sanitation and Preventive Medicine Fieldcraft.**

#### **Personal Protection Items**

Every Cadet should maintain a supply of personal protection items while they are training. These items include:

- Lip balm protects lips from cracking/chapping during weather extremes (cold, heat, and in sustained windy conditions).
- Insect repellent prevents the transmission of numerous diseases spread by insects.
  - Apply insect repellent in accordance with label directions (generally should be applied more frequently if a Cadet is performing activities that result in significant sweating, or allows the repellent to wash off during waterborne operations).
  - These repellents protect Cadets from insects like mosquitoes, sand flies, and filth-flies; from arthropods such as ticks and fleas; and from spiders. All of these "bugs" can transmit diseases to Cadets that can take them out of training.
- Hand sanitizing gel is an acceptable substitute Cadets can use to clean their hands when soap and water are either unavailable or impractical.
- Sunscreen lotions protect Cadets from the sun's ultraviolet rays that can cause sunburn, dehydration, and skin cancer.
  - Use these lotions on sun-exposed body parts whenever a Cadet spends more than 15 minutes at a time in sunlight (especially in desert and high mountain areas).
  - When the complete Army combat uniform is worn, only the hands/wrists and neck/face/ears require protection.
- Foot powder is designed to keep feet dry when Cadets are spending significant amounts of time training outdoors.
  - These powders also help prevent foot fungus (athlete's feet) and blisters when used properly.

#### **Importance of Preventive Medicine Measures**

Historically, only 20 percent of all hospital admissions resulting from U.S. military conflict were from combat injuries. The other 80 percent were from diseases and non-battle injuries. These statistics point to the importance of following standard field hygiene measures.

As a Cadet, you are going to train outdoors, in a variety of conditions (heat, cold, snow, rain), and you will be expected to not only prepare yourself for weather conditions, but also to perform your duties in these conditions. The environment can be your enemy if you are not prepared for it and do not know how to deal with the effects of being in extreme conditions. As a Cadet, you will learn how to treat some of these injuries, but more importantly, you must be able to prevent them.

Preventive medicine measures are simple, common sense actions that any Cadet can perform for protection against cold weather conditions, heat injury, insect-borne disease, intestinal disorders, and hearing loss. It is each individual's responsibility to maintain good health and use preventive medicine measures to reduce time lost due to disease and sickness.

## Operating in Hot Weather

The physical effects of heat exposure include:

- Heat load
  - Exposure to high environmental temperature produces heat stress in the body.
  - As the body attempts to compensate, physiological strain results.
  - This strain, usually in combination with other strains caused by work, dehydration, and fatigue, may lead to heat injury.
  - Environmental conditions that influence the heat balance of the body and its physical adjustments include air temperature; the temperature of surrounding objects; humidity of the air, and air movement (breezes).
- Heat relief
  - The body rids itself of heat normally through the skin and by exhaled breath.
  - Some heat is discharged by radiation from the skin, but the body relies mostly on evaporation of sweat from the skin to cool.
  - The adverse impact of high environmental temperature and humidity can be reduced by drinking enough water, wearing clothing properly, maintaining a high level of fitness, and resting after exposure to heat.
  - These measures contribute to the body's normal mechanisms for relieving its heat load.

To protect against heat injury:

- **Drink sufficient amounts of water.**
  - Your body needs a minimum amount of water for cooling, waste elimination, and metabolism.
  - Drink water frequently.
  - As you get used to the heat, your requirement for water actually increases.

NOTE: Any attempt to "train" the body to use less water can be harmful and may lead to heat injuries.

- **Drink small quantities of water frequently.**
  - It is better not to rely on thirst to remind you when to drink water.
  - Individuals in a hot climate usually do not feel thirsty enough to make up for all the water they have lost.
- **Drink extra water before road marches or challenging events such as obstacle courses or leadership reaction courses.**
  - Excess water in your system will help keep you physically strong and mentally sharp until your next drink of water.
  - Maintain excess water in your system for strength and alertness.
  - Work, rest, and drink water as your leader directs.

- Remember that heat injuries can be prevented by drinking plenty of water.
- In hot climates, the body depends upon sweating to keep it cool; therefore, water intake must be maintained to allow sweating to occur.
- Depending on the type of work and the temperature, you should drink ½ to 1 ½ canteens of water every hour (if your urine is dark yellow, you are not drinking enough water).

**CAUTION: Hourly fluid intake should not exceed 1½ quarts. Daily fluid intake should not exceed 12 quarts.**

- Rest whenever possible.
  - Rest breaks give the body a chance to cool off; that is why it is important to rest whenever the tactical situation permits.
  - Use rest breaks to drink water and to cool off. Work and rest in the shade if possible.
- Take a cool shower.
  - Your body builds up heat when you are working in a hot environment.
  - By taking a cool shower, you can help your body to release the heat and cool down.
  - You reduce the risk of becoming a casualty the next time you are exposed to heat.

Eat meals and **DO NOT** take supplements.

- Heavy sweating will cause salt loss from the body. Eating meals replaces salt.
- Eat regular meals daily to replace salt lost through heavy sweating.
- Excess intake of salt should be avoided.
- Salt tablets should not be used as a preventive measure.
- **DO NOT** take herbal-type medications, performance enhancing drugs, diet supplements, or especially ephedra. These increase your risk for heat injury.

Protect your skin from exposure by:

- Wearing your uniform properly.
- Use shade whenever possible.
- Using sunscreen creams and lotions on sun exposed skin areas.

## Heat Injuries

**Heat cramps** are caused by an imbalance of chemicals (called electrolytes) in the body as a result of excessive sweating.

- Signs and symptoms:
  - Cramping in the extremities (arms and legs).
  - Abdominal (stomach) cramps.
  - Excessive sweating.

**NOTE:** Thirst may or may not occur. Cramping can occur without the Soldier being thirsty.

- First aid measures:
  - Monitor mental status by asking simple questions, such as “what day is it?” or “who is the President?”

- Move the casualty to a cool, shady area or improvise shade if none is available.
- Loosen his clothing and boots (if not in a chemical environment).
- Have him or her slowly drink at least one canteen full of water (the body absorbs cool water faster than warm or cold water; therefore, cool water is preferred if it is available).
- Seek medical assistance should cramps continue.
- Check the casualty for signs and symptoms of heat exhaustion.

**Heat exhaustion** is caused by loss of body fluids (dehydration) through sweating without adequate fluid replacement. It can occur in an otherwise fit individual who is involved in physical exertion in any hot environment (especially if the Cadet is not acclimated to that environment).

- Signs and symptoms:
  - Excessive sweating with pale, moist, cool skin.
  - Headache.
  - Weakness.
  - Dizziness or lightheadedness.
  - Loss of appetite.
  - Cramping.
  - Nausea (with or without vomiting).
  - Urge to defecate.
  - Chills (gooseflesh).
  - Rapid breathing.
  - Tingling of hands and/or feet.
  - Confusion (not answering easy questions properly such as name, troop handler's name, day of the week.)
- First aid measures:
  - Monitor mental status by asking simple questions.
  - Move the casualty to a cool, shady area or improvise shade if none is available.
  - Loosen or remove his or her clothing and boots (unless in a chemical environment).
  - Pour water on him and fan him. Use iced sheets, if available.
  - Have him slowly drink at least one canteen of water.
  - Elevate his legs.
  - Monitor the casualty until the symptoms are gone or medical assistance arrives.
  - Check the casualty for signs and symptoms of heat stroke.

**WARNING: Heat stroke is a medical emergency that may result in death if care is delayed.**

**Heat stroke** is caused when a Cadet has been exposed to high temperatures (such as direct sunlight) or been dressed in protective over garments, which causes the body temperature to rise. Heavy exertion without proper hydration can also cause a heat stroke. Higher levels of humidity, added to high heat exposure, decrease the time

required to cause stroke. Heat stroke is caused by a failure of the body's cooling mechanism (which includes a decrease in the body's ability to produce sweat).

- Signs and symptoms:
  - The casualty's skin is red (flushed), hot, and dry.
  - He may experience weakness, dizziness/ lightheadedness, confusion, headaches, seizures, nausea, and stomach pains or cramps.
  - His respirations and pulse may be rapid and weak.
  - Unconsciousness and collapse may occur suddenly.
- First aid measures:
  - Cool casualty immediately by:
    - Monitoring mental status by asking simple questions.
    - Moving him to a cool, shady area or improvising shade if none is available.
    - Loosening or removing his clothing and boots (except in a chemical environment).
    - Spraying or pouring water on him, fanning him to permit the coolant effect of evaporation.
    - Massaging his extremities and skin, this increases the blood flow to those body areas, thus aiding the cooling process.
    - Elevating his legs.
    - Having him slowly drink at least one canteen full of water if he is conscious.
    - Apply iced sheets if available.

NOTE: Start cooling casualty immediately. Continue cooling while awaiting transportation and during transport to a medical treatment facility.

- Medical assistance. Seek medical assistance because the casualty should be transported to an aid station or hospital as soon as possible.
  - **DO NOT** interrupt the cooling process or lifesaving measures to seek help; if someone else is present send them for help.
  - The casualty should be continually monitored for development of conditions that may require the performance of necessary basic lifesaving measures.

## Operating in Cold Weather

The physical effects of cold exposure include:

- First, the body loses heat by radiation if the outside temperature is lower than the body's temperature.
- It loses heat by evaporation cooling from sweating (which is useful in hot weather but problematic in cold weather, especially when sweat trapped by clothing diminishes the insulating value of the clothing).
- Touching cold objects can cause heat loss by conduction (such as losing heat from your hands into a metal pole).
- If it is breezy outside, you can lose heat from convection (cool air blowing across skin with resultant heat loss).

To protect against cold injury:

- Exercise to increase blood circulation.
  - Exercising body parts increases blood circulation and helps you detect numbness.
  - Tighten and relax your arm and leg muscles.
  - Tighten and relax your fingers and toes.
  - Use your hands to massage and warm the face.

NOTE: The normal response to the cold is for the blood vessels in the skin and remote parts of the extremities to constrict and conserve warmed blood for the vital organs. This makes the hands, feet, face, and ears more susceptible to cold injury. Moving large muscle groups through exercise can help shift blood from the central body to the periphery.

- Wear layers of loose clothing.
  - Avoid any tight-fitting clothing, including underwear.
  - Dress as lightly as possible consistent with the weather to prevent sweating and subsequent chilling.
  - Minimize sweating. When clothing becomes wet or dirty, it loses its ability to provide warmth.
  - Remove layers of clothing before doing strenuous work or when working in heated areas. This helps to prevent overheating that causes sweating.
  - Replace layers of clothing when your strenuous work is completed.
  - Wet or dirty clothing adds to the cold injury process.
  - Change into clean, dry clothing as soon as possible.
  - Launder clothing regularly.
- Change socks to protect the feet in a cold environment.
  - Put on dry socks during rest breaks to reduce the risk of frostbite and trench foot.
    - Socks should be kept clean and dry.
    - Damp socks can be dried by placing them inside your shirt.
    - Severe frostbite and trench foot can result in the loss (amputation) of hands or feet.
    - Immersion foot and trench foot may result from exposure of the feet to wet conditions at temperatures from approximately 50° to 32° F.

NOTE: Inactive feet in damp or wet socks and boots or in tightly laced boots that impair circulation are even more susceptible to injury. Ideally a Cadet should keep at least five pairs of boot socks with them when in the field.

- Prevent dehydration in cold weather by practicing the following:
  - Continue to drink fluids such as potable water, juices, and warm, non-alcoholic beverages.
  - The amount of additional liquids consumed depends upon the individual and the type of work being done.
  - Drinking a sufficient amount of fluids in cold weather is as important as it is in hot weather.
  - In cold weather, you may not realize that your body is losing fluids and salt.
  - Sweat evaporates rapidly or is absorbed so completely by the layers of clothing that it is seldom visible on the skin.

- Rest when possible is an important preventive measure.
  - Individuals must realize that work done while bundled in several layers of clothing is extremely exhausting.
  - Leaders will determine appropriate work/rest cycles.
- Watch your buddy.
  - Remind each other to do warming exercises often.
  - Watch for signs of cold injury such as frostbite, trench foot, and hypothermia.
  - Drink sufficient amounts of water.
  - Physical and mental fatigue contributes to apathy, which leads to inactivity, personal neglect, carelessness, and reduced heat production. In turn, these increase the risk of cold injury.
  - Buddies must help each other stay sharp to prevent injury.
  - Wear appropriate uniform for cold weather (Table 8-1).
    - In cold weather, it is especially important to ensure your clothing and footgear is serviceable and fits properly.
    - Your clothing is designed in multiple layers to allow for adjustment to the environment and your activity level.

**Table 8-1**

**Proper cold weather clothing guidelines**

**To Keep Warm, Remember the Word C-O-L-D**

<b>C</b>	Cleanliness and Care	Socks and clothing work more effectively when clean. This is why you carry extra pairs with you to the field.
<b>O</b>	Avoid Overheating	Wearing too much clothing can cause overheating and excessive sweating, which makes clothes wet and decreases insulation. You will be instructed when to remove clothing.
<b>L</b>	Layers and Looseness	Clothing in loose layers assures air spaces to prevent heat loss. You will be instructed when to add clothing.
<b>D</b>	Dry	A wet garment is a cold garment. You will be instructed to wear your water repellent items, such as wet weather ensemble or poncho, when appropriate.

- You should wear enough layers to maintain body temperature but not sweat.
- Dampness from sweat degrades insulation and allows heat to be lost.
- For this reason, polypropylene underwear is designed to be worn next to the skin.

- Gortex outer garments protect from wind/rain/snow, but **DO NOT** allow adequate evaporation of sweat, so they should not be worn during physical activity.
- Protect feet.

NOTE: You will carry extra pairs of socks to the field and change them when they become wet or damp. Use foot powder on your feet and in your boots. If your socks or boots are too tight, notify your troop handler or platoon sergeant. Wash your feet daily if possible.

- Protect hands.

NOTE: You will wear gloves and inserts when necessary to protect from wind chill and contact with cold surfaces.

- Warm hands under clothes if they become numb.
- Avoid skin contact with snow, fuel, or bare metal.
- Protect face and ears.
  - You can warm your face and ears by covering them with your hands. **DO NOT** rub face or ears.
  - You will be instructed when to use sunscreen and camouflage in the cold.

## Cold Injuries

**Chilblain** is caused by repeated prolonged exposure of bare skin at temperatures from 60° F to 32°F, or 20°F for acclimated, dry, unwashed skin.

- Signs and symptoms:
  - The area may be acutely swollen, red, tender, and hot with itchy skin.
  - There may be no loss of skin tissue in untreated cases, but continued exposure may lead to infected, ulcerated, or bleeding lesions.
- First aid measures:
  - Within minutes, the area usually responds to locally applied body heat.
  - Re-warm the affected part by applying firm steady pressure with your hands, or placing the affected part under your arms or against the stomach of a buddy.
  - **DO NOT** rub or massage affected areas.

NOTE: Medical personnel should evaluate the injury because signs and symptoms of tissue damage may be slow to appear.

**Frostbite** is the injury of tissue caused from exposure to cold, usually below 32°F depending on the wind chill factor, duration of exposure, and adequacy of protection. Individuals with a history of cold injury are likely to suffer an additional cold injury. The body parts most easily frostbitten are the cheeks, nose, ears, chin, forehead, wrists, hands, and feet. Frostbite may involve only the skin (superficial), or it may extend to a depth below the skin (deep). Deep frostbite is very serious and requires prompt first aid to avoid or to minimize the loss of parts or all of the fingers, toes, hands, or feet.

- Signs and symptoms.
  - Loss of sensation (numb feeling) in any part of the body.
  - Sudden blanching (whitening) of the skin of the affected part, followed by a momentary tingling sensation.

- Redness of skin in light-skinned individuals; grayish coloring in dark-skinned individuals.
- Blisters.
- Swelling or tender areas.
- Loss of previous sensation of pain in affected area.
- Pale, yellowish, waxy-looking skin.
- Frozen tissue that feels solid (or wooden) to the touch.

**CAUTION: Deep frostbite is a very serious injury and requires immediate first aid and subsequent medical treatment to avoid or minimize loss of body parts.**

- Immediate first aid measures:
  - Face, ears, and nose - cover the casualty's affected area with his and/or your bare hands until sensation and color return.
  - Hands - open the casualty's jacket and shirt.
    - Remove the casualty's arms from their jacket.
    - Place the affected hands under the casualty's armpits.
    - Close the jacket and shirt to prevent additional exposure.
  - Feet - remove the casualty's boots and socks if he does not need to walk any further to receive additional treatment (thawing the casualty's feet and forcing him to walk on them will cause additional pain and injury). Place the affected feet under clothing and against the body of another individual.
  - Ensure a cold injury casualty is kept warm and that he is covered (to avoid further injury).
  - Seek medical treatment as soon as possible.
  - Reassure the casualty, protect the affected area from further injury by covering it lightly with a blanket or any dry clothing, and seek shelter out of the wind.
  - Remove or loosen constricting clothing (except in a contaminated environment) and increase insulation.
  - Ensure the casualty exercises as much as possible, avoiding trauma to the injured part, and is prepared for pain when thawing occurs.
  - Protect the frostbitten part from additional injury.
  - **DO NOT** rub the injured part with snow or apply cold-water soaks.
  - **DO NOT** warm the part by massage or exposure to open fire because the frozen part may be burned due to the lack of feeling.
  - **DO NOT** use ointments or other salves.
  - **DO NOT** manipulate the part in any way to increase circulation.
  - **DO NOT** use alcohol or tobacco because this reduces the body's resistance to cold.

NOTE: Remember, when freezing extends to a depth below the skin, it is a much more serious injury. Extra care is required to reduce or avoid the chances of losing all or part of the toes or feet. This also applies to the fingers and hands.

**WARNING: DO NOT attempt to thaw the casualty's feet or other frozen areas if he will be required to walk or travel to an aid station or hospital for treatment. The possibility of additional injury from walking is less when feet are frozen than when they are thawed (if possible avoid walking). Thawing in the field increases the possibilities of infection, gangrene, or other injury.**

NOTE: Thawing may occur spontaneously during transportation to the medical treatment facility; this cannot be avoided.

**Hypothermia.** When exposed to prolonged cold weather, a Cadet may become both mentally and physically numb (thus neglecting essential tasks or requiring more time and effort to achieve them). Under some conditions (particularly cold water immersion), even a Cadet in excellent physical condition may die in a matter of minutes. The destructive influence of cold on the body is called hypothermia. This means bodies lose heat faster than they can produce it. Hypothermia can occur from exposure to temperatures either above or below freezing, especially from immersion in cold water, wet-cold conditions, or from the effect of wind. General cooling of the entire body to a temperature below 95°F is caused by continued exposure to low or rapidly dropping temperatures, cold moisture, snow, or ice. Fatigue, poor physical condition, dehydration, faulty blood circulation, alcohol or other drug use, trauma, poor or inadequate nutrition, and immersion increase the risk for hypothermia.

Remember, cold may affect the body systems slowly and almost without notice. Cadets exposed to low temperatures for extended periods may suffer ill effects even if they are well protected by clothing.

- Signs and symptoms:
  - Early:
    - Shivering (an attempt by the body to generate heat).
    - Pulse is faint or very difficult to detect.
    - Drowsiness and mental slowness.
    - Stiffness and lack of coordination.
    - Slurred speech.
  - Moderate:
    - Glassy eyes.
    - Slow and shallow breathing.
    - Very weak or absent pulse.
    - Increasing stiffness and lack of coordination.
    - Unconsciousness.
  - Severe:
    - Frozen extremities.
    - Irregular heart action.
    - Sudden death.
- First aid measures:
  - Early or moderate:

**CAUTION: DO NOT expose the casualty to an open fire, as they may become burned.**

- Provide heat by using a hot water bottle or canteen filled with hot water, wrapped in cloth.
- Call or send for help.
- Move casualty to a warm place.
- Immediately remove all wet clothing.
- Place casualty in dry clothing and/or sleeping bag.
- Severe:

- Start rescue breathing at once if the casualty's breathing has stopped or is irregular or shallow.
- Warm liquids (not too hot!) may be given gradually if the casualty is conscious.
- **DO NOT** force liquids on an unconscious or semiconscious casualty because they may choke.
- Transport casualty on a litter.

**WARNING: Re-warming a severely hypothermic casualty is extremely dangerous in the field due to the possibility of such complications as re-warming, shock, and disturbances in the rhythm of the heartbeat. These conditions require treatment by medical personnel.**

**CAUTION: The casualty is unable to generate his own body heat. Therefore, merely placing him in a blanket or sleeping bag is not sufficient.**

**Immersion foot and trench foot** are injuries that result from fairly prolonged exposure to 32 deg F to 50 deg F temperatures. Inactive feet in damp or wet socks and boots, or tightly laced boots which impair circulation, are even more susceptible to injury. This injury can be very serious; it can lead to amputation of toes or parts of the feet. If exposure of the feet has been prolonged and severe, the feet may swell so much that pressure closes the blood vessels and cuts off circulation. Should an immersion injury occur, dry the feet thoroughly and transport the casualty to a medical treatment facility by the fastest means possible.

- Signs and symptoms:
  - At first, the parts of the affected foot are cold and painless, the pulse is weak, and numbness may be present.
  - Next, the parts may feel hot and burning; shooting pains may begin.
  - In later stages, the skin is pale with a bluish cast and the pulse decreases.
  - Other signs and symptoms that may follow are blistering, swelling, redness, heat, hemorrhaging (bleeding), and gangrene.
- First aid measures are required for all stages of immersion injury.
  - Re-warm the injured part gradually by exposing it to warm air.
  - Protect the part from trauma and secondary infections.
  - Dry, loose clothing or several layers of warm coverings are preferable to extreme heat.
  - Under no circumstances should the injured part be exposed to an open fire.
  - Elevate the injured part to relieve the swelling.
  - Transport the casualty to a medical treatment facility as soon as possible.
  - When the part is re-warmed, the casualty often feels a burning sensation and pain.
  - Symptoms may persist for days or weeks even after re-warming.
  - When providing first aid for immersion foot and trench foot –
    - **DO NOT** massage the injured part.
    - **DO NOT** moisten the skin.
    - **DO NOT** apply heat or ice.

## Preventive Measures against Arthropods (Insects Such as Mosquitoes, Ticks, and Lice), Venomous Reptiles, and Poisonous Plants.

- To avoid injury from insects and insect related diseases:
  - Keep sleeves down and trouser legs tucked into boots to protect from biting insects.
  - Apply insect repellent to exposed skin, your ankles, and your waistline.
  - Apply insect repellent to your uniform.
  - Check yourself and your buddy for ticks twice a day.
- To avoid injury from poisonous reptiles and plants:
  - Look inside sleeping bag before getting in.
  - **DO NOT** play with snakes.
  - Keep sleeves down and trouser legs tucked into boots to protect from poisonous plants.
  - Look inside boots before putting them on.
- Proper use of repellent.
  - Repellent should be applied according to label instructions to exposed areas of skin including the face, ears, neck, arms, and hands.

### **CAUTION: Repellent will NOT be applied to eyes, lips, and sensitive skin.**

- In addition to properly using insect repellent, the following precautions should always be taken:
  - Wear your uniform properly.
  - Tuck pant legs into the boots and roll the sleeves down.
  - Wear the uniform loosely.
  - Check clothing frequently.
  - Use the buddy system to check areas of your body not easily seen during self-examination.
- Clean and inspect yourself and your clothing.
  - Cleaning and inspecting your body to protect against arthropod bites includes the following:
    - Wash yourself daily if the situation permits.
    - Pay particular attention to the groin and the armpits.
    - Use the buddy system to check each other for ticks and other arthropod bites.
    - If ticks are found attached, seek medical attention.
    - Use insecticide powder, cream, or shampoo when prescribed by medical personnel.
  - Proper wear of the uniform will also reduce the incidence of bites.
    - The following points will be helpful in protecting your body:
      - Wear headgear to protect the top of your head.
      - Wear a loose-fitting uniform (not tightly tailored) and repair any tears or holes.
    - When the arthropod threat is high, use the following measures for protection:
      - Blouse the pants in the boots and completely lace the boots.
      - Tuck the undershirt in at the waist.

- Wear sleeves down.
- Button the blouse or shirt at the neck and the wrists.
- Clean and inspect your clothing.
  - Cleaning and inspecting your uniform will also provide protection against insect bites.
  - Wash your uniform to remove arthropods and their eggs.
  - When laundry service is not available, scrub the uniform yourself with soap and water.
  - The clothing seams may contain lice eggs, which will hatch after a few days.
- Use a bed net when sleeping, if available and the situation permits.
  - Protecting yourself against biting arthropods at night includes the use of a bed net and the use of insect spray inside the bed net.
  - Suspend the bed net above the sleeping area.
  - Tuck the edges of the bed net under the sleeping pad or bag.
  - Spray the interior space with spray insecticide.
  - Bed nets must be kept in good repair (mend any holes) in order for the preceding measures to be effective.
  - Observe the following precautions when preparing the bed net:

## **Obtain Food and Water from an Approved Source**

### **Sources of Bacteria**

Intestinal diseases are usually spread through contact with infectious organisms that can contaminate improperly prepared or disinfected food and water supplies as well as in human waste. Our hands come into contact with many sources of bacteria such as the latrine door, friend's hands, our nose, our weapons, and many others. Fight preventable illness to keep from getting sick from illnesses carried by contaminated food and water:

- Drink water from approved sources only.
- Eat from approved sources only.
- Obtain ice only from medically approved sources.
- Inspect all cans and food packets prior to use.
- Discard cans with leaks or bulges.
- Discard food packets with visible holes or obvious signs of deterioration.
- **DO NOT** eat foods or drink beverages that have been prepared in galvanized containers since they could cause zinc poisoning.
- Obtain food from the dining facility when possible. The dining facility is the best source for safe food.
- Wash your hands:
  - For at least 30 seconds to prevent disease.
  - After using the latrine.

- Before touching eating utensils or food.
- After eating.
- Purify your drinking water if there is no approved source of drinking water:
  - Fill your canteen with the cleanest water available.
  - Add iodine tablets.
    - Add two tablets to a one-quart canteen of water.
    - Double the amount of tablets if a two-quart canteen is used.
  - Replace the cap.
  - Wait 5 minutes for the tablets to dissolve.
  - Shake the canteen to mix the contents.
  - Tip the canteen to disinfect the cap threads.
  - Loosen the cap.
  - Tip the canteen over to allow leakage around the canteen threads.
  - Turn the canteen right side up.
  - Tighten the cap.
  - Wait 30 additional minutes before drinking.

NOTE: There are alternate methods for purifying water such as chlorine ampoules, tincture of iodine, or common household bleach. If none of these purifying agents are available, boil water for 5-10 minutes.

## Prevent Skin Infections

**Hand washing** regularly is the best defense against germs from the soil and from objects handled by other people. The most important times to wash your hands are:

- After using the latrine.
- Before touching eating utensils or food.
- After eating.
- After handling any item that can potentially transfer germs.
- Frequently during the workday to keep your hands free of germs.

**Cleaning your hands with hand-sanitizing gel** is an effective way to disinfect them from nearly all germs that cause illnesses. Hand-sanitizing gel does a better job at destroying germs than soap and water, but you must use soap and water to remove grime, and use a grease-cutting solvent to remove grease. You should use soap and water to wash your face and to bathe the rest of your body. While in the field you will not always have ready access to your rucksack. Carry these items with you at all times:

- Bar of soap.
- Washcloth/baby wipes.
- Toilet paper/baby wipes.
- Toothbrush and toothpaste.
- Shampoo.
- You can use your washcloth to wash your skin with soapy water, then wring it out and use it to rinse your skin, and let the air dry your skin.

**Preventing skin infections** involves three simple steps:

- Bathe frequently.
  - Take a full bath or shower at least once every week when in the field.

- If showers or baths are not available, use a washcloth daily to wash your genital area, armpits, feet, and other areas you sweat or which become wet.
- These areas include the thighs, and for females, under the breasts.
- Use of perfumed soaps or feminine deodorants in the field can cause irritation and should not be used.
- Males should shave facial hair often enough to be clean-shaven.
- Keep your skin dry.
  - Using foot powder on your feet is encouraged.
  - This is especially important if you have had fungal infections in the past.
  - Talcum powder is recommended for areas where wetness is a problem.
  - If talcum powder is not available, use cornstarch as a substitute.
- Change to clean clothing after a full bath or shower.
  - Loose-fitting uniforms allow for better ventilation and blood circulation.
  - Wear proper clothing for the environment.
  - Nylon and silk-type undergarments are not suitable, especially in hot weather.
  - Cotton undergarments are more absorbent, and they allow the skin to dry.

## Proper Foot Care

**Foot care (before movement)** includes taking the following steps:

- Wear the proper type of footwear that is correctly fitted and broken in.
- Wear clean socks that are free of holes or knotty darns.
- Use foot powder and clean socks.
- Treat and protect blisters, pressure spots, and infections before movement.

**Foot care (during movement)** includes the following steps:

- Keep your feet as dry as possible.
- Change socks (as possible) when they become damp or wet.
- Dry socks by putting them under your shirt around your waist.
- Relieve tender pressure spots on the feet by adjusting your gear.
- Dust your feet with foot powder once or twice daily.
- Inspect your feet at rest periods.
- Wash your feet during the noon break if possible.
- Raise your feet while resting to help reduce congestion and swelling.
- Take care of blisters whenever time permits.
- Wash blisters and the surrounding areas with soap and water.

**Seek medical treatment for painful blisters or signs of infection** such as redness, throbbing, and drainage.

- Sprinkle foot powder in your socks to help absorb the moisture.
- Remove the inserts from your boots at night to prevent fungus from growing.
- If you get athlete's foot, you need an anti-fungal solution or cream to treat it.
- Wear one pair of boots one day and change to your other pair the next day.

- Use boot/sock liners for road marches greater than 5 km (3.1 mi) in length to prevent blisters.
- Boot/sock liners are your black dress socks worn underneath your military black boot socks.

## **Waste Disposal**

### **Food Waste Disposal**

- Waste disposal is an important element in the protection of Soldiers' health in the field.
- Intestinal diseases are usually spread through contact with infectious organisms that can be spread by flies.
- Use covered containers if available to keep out pests and to prevent breeding of flies.
- Use plastic bags in the event you have dumpster-type receptacles and regular waste pick-up.
- Bury your food waste immediately if other options (burning or contract pick-up) are not available.
- Promptly burning or burying your waste helps to prevent the spread of germs by flies and other insects.
- Burying waste also helps keep unwanted animals out of your bivouac area.

### **Human Waste Disposal**

- Intestinal diseases are usually spread through contact with infectious organisms that can be spread in human waste.
- The method used for disposal of waste depends upon the field situation, the unit, and its location.
- Waste disposal impacts upon the health of a unit's personnel and must be done correctly.
- Recommended methods of disposing of human waste follow:
  - Use the unit latrine when available (deep pit for extended field operations).
    - Deep-pit latrines are constructed for temporary camps (intended for stays of more than 3 days).
    - These type latrines are found in some training areas and base camps.
    - They are sometimes enclosed in buildings.
  - Dig a cat hole to use for excreting waste if your unit is on the move.
    - The cat hole is dug 12 inches across and from 6 to 12 inches deep.
    - Cover it sufficiently to prevent flies from spreading germs from waste to your food and to keep unwanted animals out of your area.
    - On a march, cover the cat hole with dirt immediately after use.
  - Use a straddle trench for 1-3 day field operations.
    - These latrines are screened for privacy.
    - Two trenches per 100 males and three trenches per 100 females.
- Remember to sanitize your hands and any containers that are reusable when appropriate.

## Oral Hygiene

**Good oral hygiene** consists of three simple steps:

- Brush your teeth after every meal if possible (toothpaste helps but it is not a necessity).
- Use dental floss at least once a day.
- Rinse your mouth with water that is safe to drink after brushing and flossing.
- This care may prevent gum disease, infection, and tooth decay.

**Going to the dentist at least once a year** for an examination (and treatment, as needed) can prevent serious problems.

## Prevent Hearing Loss

**To protect against hearing loss** use individual measures against noise hazards:

- Use protective devices (earplugs, ear canal caps, or earmuffs) to reduce the risk of noise-related hearing loss.
- Earmuffs should be worn over earplugs in high steady-state noise level areas.
- Keep hearing protection devices (meant to be inserted into the ear canal) clean to avoid ear infections.
- Avoid noise and limit the time in noise hazardous areas to only the time necessary to perform the mission.

## U.S. Army Cadet Smoking and Tobacco Use Policy

### Smoking Policy

- Cadets will not use tobacco in any form at any time while in a USAC duty status. Furthermore, the consumption or use of tobaccos products by Cadet under the age of 18 is against the law, and therefore inconsistent with the requirements to maintain Cadet membership.
- The USAC has a smoke-free workplace policy

### Effects of Tobacco Use

- Long-term health costs of tobacco use.
  - Heart disease—leading risk for heart attack.
  - Contributes to strokes and poor circulation (due to diseased blood vessels).
  - Chronic lung diseases—emphysema, bronchitis.
  - Cancers - lung, throat, mouth, bladder, possibly cervix.
  - Osteoporosis (brittle bones).
  - Increases risk in surgery and prolongs healing process.
  - Affects health of nonsmokers.
    - Second-hand smoke linked to lung cancer, asthma attacks.
    - Children exposed to cigarette smoke have more middle ear and lower respiratory infections.
    - Smoking during pregnancy is associated with low birth weight and pre-term births.
    - May increase risk of sudden infant death syndrome (SIDS).

- Leading cause of death in the U.S. – heart and blood vessel disease.
- Leading preventable cause of death – tobacco use. Tobacco use is responsible for more deaths than all other causes (450,000 plus deaths per year). That's equivalent to two fully loaded jumbo jetliners colliding in mid-air, each day, with no survivors.

### **Smokeless Tobacco**

- Many people believe smokeless tobacco is safer than smoking.
- It is well established that smokeless tobacco of all types (chew, snuff, bandits) leads to the development of heart disease, various cancers, gum recession, and bone loss around the teeth.
- Cancers of the mouth and throat are particularly deforming and deadly.

### **Effect of Tobacco Use on Cadets' Performance and Health**

- Increases number of sick call visits.
- Increases susceptibility to upper respiratory infections (colds and flu), which may progress to pneumonia.
- Decreases night vision.
- Decreases hand-eye coordination.
- Decreases stamina.
- Increases cold weather injuries.
- Increases overall number of injuries.
- Leads to addiction.
- Long-term adverse effects of using tobacco can cause chronic diseases of heart and lungs, cancer, stroke, and high blood pressure.
- Short-term effects can cut into your effectiveness in performing your mission. They include:
  - Watering eyes.
  - Runny nose.
  - Cough.
  - Loss of smell and taste.
  - Increase in heart rate (up to 30percent).
  - More easily fatigued.
  - Elevation in blood pressure (up to 15percent).
  - Decreased appetite.
  - Diarrhea, constipation, or both.
  - Reduced stamina.

## **8-2. Serve as a Member of a Team.**

The Army defines a team as a "group of individuals banded together along organizational lines for the purpose of accomplishing a certain goal." Cohesion is the "glue" that brings people together to make a team. It helps Cadets to develop and sustain their commitment and resolve to accomplish the unit's mission. The Army's description of cohesion includes these elements:

- Bonding: "The development of strong interpersonal relationships among Cadets, and between them and their leaders."

- Commitment: "Dedication not only to the unit and what it represents, but to the values and goals of the Nation as well."
- Resolve: "The shared determination of Cadets and their leaders to work interdependently to accomplish the mission, and to sustain this capability over a long period of time."

Cohesion is dependent on several factors:

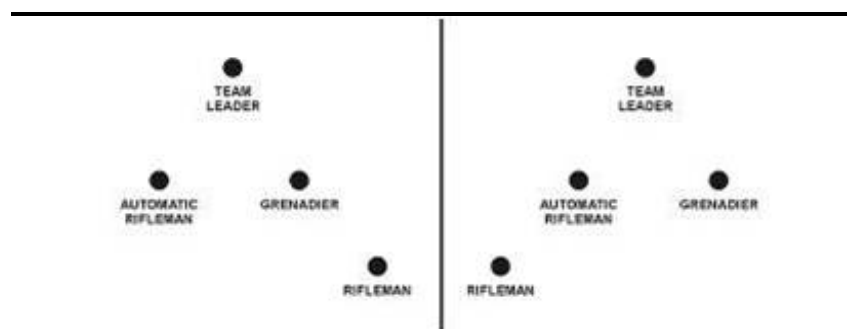
- Common goal.
- People working together.
- Effective communication.
- Mutual assistance.

### 8-3. Team Formations.

Team formations are arrangements of elements and Cadets in relation to each other.

- Squads use formations for control, flexibility, and security.
- Table 8-2 compares fire team wedge and file formations.
- Fire team leaders are up front in formations to lead by example - "follow me and do as I do."
- All Cadets in the team must be able to see their leader.
- Wedge - the wedge is the basic formation for the fire team (Figure 8-1).

<b>Table 8-2</b>	
<b>Fire team formations</b>	
<b>Fire Team Wedge</b>	
When normally used	Basic fire team formation
Control	Easy
Flexibility	Good
Security	Good
<b>Fire Team File</b>	
When normally used	Close terrain, dense vegetation, limited visibility
Control	Easiest
Flexibility	Less flexible than the wedge
Security	Least



**Figure 8-1. Fire team wedge formation**

- The interval between Cadets in the wedge formation is normally 10 meters.
- The wedge expands and contracts depending on the terrain.
- When rough terrain, poor visibility, or other factors make control of the wedge difficult, fire teams modify the wedge.
- The normal interval is reduced so that all team members can still see their team leader and team leaders can see their squad leader.
- The sides of the wedge can contract to the point where the wedge resembles a single file.
- When moving in less rugged terrain, where control is easier, Cadets expand or resume their original positions.
- File formation is used by fire teams when terrain precludes use of the wedge (Figure 8-2).



**Figure 8-2. Fire team file formation**

#### **8-4. Cover, Concealment, and Camouflage.**

The U.S. Army teaches cover, concealment, and camouflage techniques as important field craft subjects. From the Army's perspective, if the enemy can see you, you can be hit by their fire. Therefore, concealment from enemy observation and cover from enemy fire are critical. We teach some of these basic skills in the USAC as an introduction to basic Army field skills. You will have the opportunity to put into practice some of what you learn here on field training exercises (FTXs) and during morale-building events such as paintball.

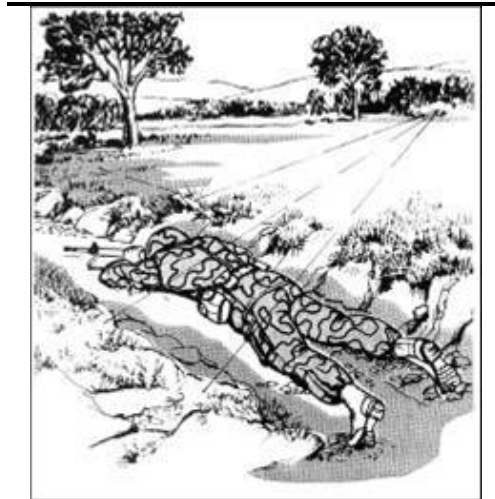
Natural terrain often provides cover and concealment; however, depending on the land type you find yourself in, you may have to prepare your cover and use natural and man-made materials to camouflage yourself, your equipment, and your position.

##### **Cover**

Cover gives protection from enemy fire (see Figure 8-3).

- Cover can also conceal you from enemy observation.
- Cover can be natural or man-made.
- Natural cover includes such things as logs, trees, stumps, ravines, and hollows.
- Manmade cover includes such things as fighting positions, trenches, walls, rubble, and craters.

- Even the smallest depression or fold in the ground can give some cover.
- Look for and use every bit of cover the terrain offers.
- Use ravines (see Figure 8-4), gullies, hills, wooded areas, walls, and other cover to keep from being seen.
- Avoid open areas and do not skyline yourself on hilltops and ridges.



**Figure 8-3. Types of cover**



**Figure 8-4. Troops moving along a ravine**

## **Concealment**

Concealment is anything that hides you from observation.

- Concealment does not protect you from enemy fire.
- Concealment, like cover, can also be natural or man-made.
- Natural concealment includes such things as bushes, grass, trees, and shadows.
- If possible, natural concealment should not be disturbed.
- Man-made concealment includes such things as camouflage uniforms, camouflage nets, face paint, and natural material that has been moved from its original location.
- Man-made concealment must blend into the natural concealment provided by the terrain.

- Light discipline, noise discipline, movement discipline, and the use of camouflage contribute to concealment.
- Light discipline is controlling the use of lights at night by such things as not smoking in the open, not walking around with a flashlight on, and not using vehicle headlights.
- Noise discipline is taking action to deflect sounds generated by your unit (such as operating equipment) away those listening for you, and when possible, using methods to communicate that do not generate sounds (arm-and-hand signals).
- Movement discipline restricts around routes that lack cover and concealment.
- In the defense, build a well-camouflaged fighting position and avoid moving about. In the offense, conceal yourself and your equipment with camouflage and move in woods or on terrain that gives concealment.
- Darkness cannot hide you from enemy observation in either offense or defense.
- The enemy's night vision devices and other detection means let them find you in both daylight and darkness.

## Camouflage

Camouflage is anything you use to keep yourself, your equipment, and your position from looking like what they are.

- Both natural and man-made material can be used for camouflage.
- Change and improve your camouflage often.
- The time between changes and improvements depends on the weather and on the material used.
- Over time, natural camouflage can lose its effectiveness (natural materials die and fade).
- Likewise, man-made camouflage may wear off or fade.
- When those things happen, you and your equipment or position may not blend with the surroundings.
- Camouflage considerations.
  - Movement draws attention when you give arm-and-hand signals or walk about your position, your movement can be seen by the naked eye at long ranges. In the defense, stay low and move only when necessary. In the offense, move only on covered and concealed routes.
  - Positions must not be where the enemy expects to find them. Build positions on the side of a hill, away from road junctions or lone buildings, and in covered and concealed places. Avoid open areas.
  - Outlines and shadows may reveal your position or equipment to air or ground observers. Outlines and shadows can be broken up with camouflage. When moving, stay in the shadows when possible.
  - Shine may also attract the enemy's attention. In the dark, it may be a light such as a flashlight. In daylight, it can be reflected light from polished surfaces such as shiny mess gear, a windshield, a watch crystal and band, or exposed skin. A light or its reflection may help the enemy detect your position. To reduce shine, cover your skin with clothing and face

- paint. Also, dull the surfaces of equipment and vehicles with paint, mud, or some type of camouflage material.
- Shape is outline or form. The shape of a helmet is easily recognized. A human body is also easily recognized. Use camouflage and concealment to breakup shapes and blend them with their surroundings. Be careful not to overdo it.
  - Colors of your skin, uniform, and equipment may help the enemy detect you if the colors contrast with the background.
    - For example, a green uniform will contrast with snow-covered terrain.
    - Camouflage yourself and your equipment to blend with the surroundings.
  - Dispersion is the spreading of personnel, vehicles, and equipment over a wide area (see Figure 8-5).
    - It is usually easier to be detected when formations are bunched, so, spread out.
    - The distance between you and your fellow Cadet will vary with the terrain, degree of visibility, and enemy situation.
    - Distances will normally be set by unit leaders or by a unit's standing operating procedure (SOP).



**Figure 8-5. Fire team dispersed**

- How to camouflage.
  - Before camouflaging, study the terrain and vegetation of the area in which you are operating.
  - Then pick and use the camouflage material that best blends with that area.
  - When moving from one area to another, change camouflage as needed to blend with the surroundings.
  - Take grass, leaves, brush, and other material from your location and apply it to your uniform and equipment and put face paint on your skin (see Figure 8-6).
  - Helmets: Camouflage your helmet with the issue helmet cover or make a cover of cloth or burlap that is colored to blend with the terrain.



**Figure 8-6. Camouflaged personnel**

- The cover should fit loosely with the flaps folded under the helmet or left hanging.
- The hanging flaps may break up the helmet outline.
- Leaves, grass, or sticks can also be attached to the cover.
- Use camouflage bands, strings, burlap strips, or rubber bands to hold those in place.
- If there is no material for a helmet cover, disguise and dull helmet surface with irregular patterns of paint or mud.
- Uniforms: Most uniforms come already camouflaged.
  - However, it may be necessary to add more camouflage to make the uniform blend better with the surroundings.
  - To do this, put mud on the uniform or attach leaves, grass, or small branches to it.
  - Too much camouflage, however, may draw attention.
  - When operating on snow-covered ground, wear over-whites (if issued) to help blend with the snow. If over-whites are not issued, use white cloth, such as white bed sheets to get the same effect.
- Skin: Exposed skin reflects light and may draw the enemy's attention.
  - Even very dark skin, because of its natural oil, will reflect light.
  - Use Figure 8-7 and Table 8-3 for guidance when applying face paint to camouflage the skin.
  - When applying camouflage work with a buddy (in pairs) and help each other.
  - Apply a two-color combination of camouflage stick in an irregular pattern.
  - Paint shiny areas (forehead, cheekbones, nose, ears, and chin) with a dark color.
  - Paint shadow areas (around the eyes, under the nose, and under the chin) with a light color.



**Figure 8-7. Colors used in camouflage**

- In addition to the face, paint the exposed skin on the back of the neck, arms, and hands.
- Palms of hands are not normally camouflaged if arm-and-hand signals are to be used.
- Remove all jewelry to further reduce shine or reflection.
- When camouflage sticks are not issued, use burnt cork, bark, charcoal, or light-colored mud.

**Table 8-3  
Camouflaging skin**

	<b>Skin Color</b>	<b>Shine Areas</b>	<b>Shadow Areas</b>
<b>Camouflaged Material</b>	Light or dark	Forehead, cheekbones, ears, nose, and chin	Around eyes, under nose, under chin
<b>Loam and Light Green Stick</b>	Use in areas with green vegetation	Use loam	Use light green
<b>Sand and Light Green Stick</b>	Use in areas lacking green vegetation	Use light green	Use sand
<b>Loam and White</b>	Use only in snow-covered terrain	Use loam	Use white
<b>Burnt Cork, Bark Charcoal</b>	Use if camouflage sticks not available	Use	Do not use
<b>Light-Colored Mud</b>	Use if camouflage sticks not available	Do not use	Use

### **8-5. Foot Marches and Foot Care.**

Foot marches transport Cadets from one place to another by any available means. A successful move places Cadets and equipment at their destination at the proper time ready for training. There are many historic examples of famous, successful foot marches. Two of these marches are described below.

The grueling foot march that took place during the Sicilian campaign from 20 to 21 July 1943 is a good example of a successful World War II foot march. The 3d Battalion, 30th Infantry Regiment, 3d Infantry Division was directed to move on foot **across mountains** from Aragona to San Stefano to enter into a coordinated attack on enemy forces in San Stefano. The battalion made this record-breaking, **54-mile, cross-**

**country continuous march in only 33 hours!!** Two hours after arrival, the battalion was part of the attack on San Stefano, which resulted in the town's capture.

A second example was the movement of large elements of the 3rd U.S. Army during the battle of Ardennes in 1944 to stop the enemy counteroffensive. On 16 December 1944, while the 3d U.S. Army was preparing to attack the Siegfried line in Germany, the Battle of the Bulge commenced. By 19 December, the German attack had reached such large proportions that the 3d U.S. Army was directed to cease its attack to the east and turn north. The 3rd U.S. Army shifted its troops from the Saarlautern - Saarbrücken area to the Luxemburg-Belgium area, a distance of **100-road miles, a march accomplished in 3 days!**

### **Considerations for Conducting a Foot March**

- March discipline includes observing and enforcing the rules and instructions that govern a unit on a march.
  - These include formation, distances between elements, speed, and the effective use of concealment and cover.
  - Specific controls and restrictions such as water, light, noise, and disciplines are also included.
  - March discipline is the culmination of effective training, which results in enthusiastic teamwork among all Cadets.
- Water discipline must be observed by all unit members to ensure best health and marching efficiency. The following rules must be adhered to:
  - Drink plenty of water before each march to aid sustainment during movement.
  - Drink only treated water from approved sources.
  - Drink water often—before, during, and after the march.
  - Drink small quantities of water rather than gulping or rapid intake.
  - Drink water even when not thirsty.
  - Drink water slowly to prevent cramps or nausea.
  - Avoid spilling water.
  - Refill canteens/hydration packs at every opportunity.
  - The human body does not operate efficiently without adequate liquid intake.
    - When Cadets are engaged in strenuous activities, excessive amounts of water and electrolytes are lost through perspiration.
    - More water is lost through normal body functions such as respiration and urination, which can create a liquid imbalance in the body.
    - Dehydration can occur under both above conditions unless water is immediately replaced and Soldiers rest before continuing activities.
    - Deficient liquid and salt intake during hot weather can also result in heat injuries.
    - The danger of dehydration is as prevalent in cold regions as it is in hot, dry areas. The difference is that in hot weather the Cadet is aware that his body loses liquids and salt through perspiration. When a Cadet is bundled up in many layers of clothing during cold weather, he can't see perspiration and has difficulty knowing this

condition exists. Any perspiration is rapidly absorbed by heavy clothing or evaporates and is rarely visible on the skin.

**Foot care during a march** is extremely important since feet are enclosed in heavy rigid footwear during most working hours and are constantly in action.

- Good hygiene measures include bathing frequently, using foot powder, wearing properly fitted footwear to allow for ventilation, and correctly trimming toenails.
- The care of minor foot ailments caused by the march should be given the utmost attention.
- Many major conditions requiring hospitalization and disability have resulted from neglected or maltreated minor conditions.
- Conditioning is accomplished by progressively increasing the distance to be marched from day to day.
  - Marching is a good way to strengthen the feet and legs.
  - Running alone will not suffice.
  - The arch, ankle, and calf can be conditioned by performing simple exercises such as rising high on the toes, or standing on a towel and using the toes to roll the towel back under the arch.
- Certain preventive measures can be implemented to avoid painful foot problems.
  - Before marches, trim toenails at least every two or three weeks, depending upon individual needs.
  - Cut toenails short and square, and straight across (See chapter 4, Personal Hygiene for added details).
  - Keep feet clean and dry, and use foot powder.
  - Wear clean, dry, un-mended, good-fitting socks (preferably cushion-soled) with seams and knots outside.
  - A nylon or polypropylene sock liner can reduce friction and add protection.
  - Carry an extra pair of socks.
  - Carefully fit new boots.
  - When getting used to a new pair of boots, alternate with another pair; tape vulnerable foot areas before wearing.

**During halts**, lie down with the feet elevated.

- If time permits, massage the feet, apply foot powder, change socks, and medicate blisters.
- Cover open blisters, cuts, or abrasions with absorbent adhesive bandages.
- Obtain relief from swelling feet by slightly loosening bootlaces where they cross the arch of the foot.

**After marches**, repeat procedures for the care of feet, wash and dry socks, and dry boots.

- Medicate blisters, abrasions, corns, and calluses.
- Inspect painful feet for sprains and improper fitting of socks and boots.
- Feet can develop red, swollen, tender skin along the sides of the feet from prolonged marching, which could become blisters.
- Therefore, feet require aeration, elevation, rest, and wider footwear.

- Prevent major foot problems by keeping the feet clean.
- The formation of blisters and abrasions with dirt and perspiration can cause infection and serious injury.
- If possible, give the feet a daily foot bath.
- In the field, cool water seems to reduce the sensation of heat and irritation.
- After washing, dry the feet well.

**Properly fitted boots** are ensured by checking that the space between the end of the great toe and the toe of the boot is the width of the thumb.

- In the unlaced boot, there should be enough space under the lower edge of the tongue to insert an index finger.
- Poorly fitted boots can cause blisters, abrasions, calluses, and corns.
- Pressure is caused by boots being too small.
- Friction is caused by boots being too large.
- If the tops of the toes are involved, the cap is too low or too stiff.
- If the ends of the toes are affected, the boot is too short or too loosely laced.
- If the sides of the big and little toes become irritated, the boot is too narrow.
- Irritation at the heel is caused by boots being too long, too loosely laced, or too wide a heel space.

**Properly laced boots** prevent blisters and improper blood flow in the foot.

- Laces can assume a seesaw action, which can produce a long blister across the instep.
- To prevent blistering, avoid lacing over the instep.
- If possible, broad laces should be used and an extra pair should be carried.

**Check for properly fitted socks** by first standing with your weight evenly distributed on both feet.

- If the socks fit correctly, no tightness or fullness should exist.
- The wool cushion-sole sock is best because it offers good foot protection.
- Cadets should allow 3/8 of an inch for shrinkage of new socks.
- Those that are too large wrinkle inside the shoe, rub the feet, and cause blisters and abrasions.
- Socks that are too small wear quickly and reduce blood flow in the foot.
- Wear two pairs of socks when breaking in new boots—dress socks underneath wool socks.
- Socks must be changed daily - dirty socks are conductors of heat that allow warmth to escape.
- Socks should be washed in lukewarm water to preserve the fiber—hot water can cause them to shrink.
- When socks become damp, they can be dried by placing them inside a shirt next to the body.
- Socks should be completely dry before wearing.
- If it is not possible to wash the socks, they should be changed.
- Dirty socks should be dried and kneaded with the hands to remove dirt and hardness.

## 8-6. Review Questions.

- 8-1. How can you protect against heat injury?
- Drink sufficient amounts of water.
  - Drink small amounts of water frequently.
  - Drink extra water before challenging events like road marches or obstacle courses.
  - All of the above.
- 8-2. What are the three types of heat injuries?
- Heat tiredness, heat stroke, heat sweats.
  - Heat headache, heat cramps, nausea.
  - Heat stroke, overheated head, hot foot.
  - Heat cramps, heat exhaustion, heat stroke.
- 8-3. Symptoms of heat cramps may include:
- Confusion
  - Lack of sweating
  - Cramping in the arms, legs, and/or stomach
  - Numbness
- 8-4. Symptoms of heat exhaustion may include:
- Chills
  - Lack of sweating
  - Itchy palms
  - Slow, shallow breathing
- 8-5. Symptoms of heat stroke may include:
- Heavy sweating
  - Cool, clammy skin
  - Hot, dry skin
  - High level of alertness
- 8-6. Pick one way to protect against a cold injury.
- Loosen clothing.
  - Drink coffee.
  - Wear gloves
  - Remain indoors.
- 8-7. What does the word "COLD" stand for when preventing cold weather injuries?
- Coffee, Over layers, Lay down, Dinner
  - Clean your body, promote Overheating, Loosen gloves, Do more exercise.
  - Cleanliness & Care, avoid Overheating, Layers and Looseness, Dry.
  - Close hood, Open zippers, Drink liquids, Don't move around.

8-8. What Trench Foot?

- a. An injury that results from getting a foot stuck in a trench.
- b. Prolonged exposure to 32 to 50 degree temperatures with damp or wet socks.
- c. A length of trench that is one foot long.
- d. A rotten, old boot.

8-9. How can you avoid injuries from insects?

- a. Keep sleeves down, don't take a shower, check for ticks weekly.
- b. Keep sleeves down, check for ticks twice a day, apply insect repellent to exposed skin and uniform.
- c. Don't play with insects.
- d. Bathe once a week – sweat naturally repels insects.

8-10. How can you prevent skin infections?

- a. Wash your hands frequently.
- b. Clean your hands with a hand sanitizing gel.
- c. Keep your hands out of the dirt.
- d. Both a and b above.

8-11. Pick the best way to take care of your feet during movement:

- a. Change socks frequently, keep feet dry, use foot powder, inspect your feet.
- b. Tighten your boots, wear white socks.
- c. Keep your socks wet.
- d. Pop blisters as soon as they appear.

8-12. What is one step to oral hygiene?

- a. Brush your teeth regularly.
- b. Avoid fatty foods.
- c. Chew on a toothpick.
- d. Don't put anything in your mouth.

8-13. Cohesion is:

- a. A covalent bonding model.
- b. The "glue" that binds a team together.
- c. A process by which a Cadet joins the US Army Cadet Corps.
- d. A city in France.

8-14. A fire team wedge is:

- a. The best way to get from one place to another.
- b. A formation used to defend against an ambush.
- c. The basic fire team formation.
- d. Best used in dense vegetation and close terrain.

8-15. What is the normal interval between Cadets in a fire team wedge?

- a. 2 meters.
- b. 10 meters.
- c. 50 meters.
- d. 100 meters.

8-16. Concealment is:

- a. A method of applying camouflage.
- b. A platoon formation.
- c. The best way to get from one place to another.
- d. Anything that hides you from observation.