

FM 21-15

# CARE AND USE OF INDIVIDUAL CLOTHING AND EQUIPMENT



HEADQUARTERS  
DEPARTMENT OF THE ARMY

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## CARE AND USE OF INDIVIDUAL CLOTHING AND EQUIPMENT

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## **Preface**

### **PURPOSE AND SCOPE**

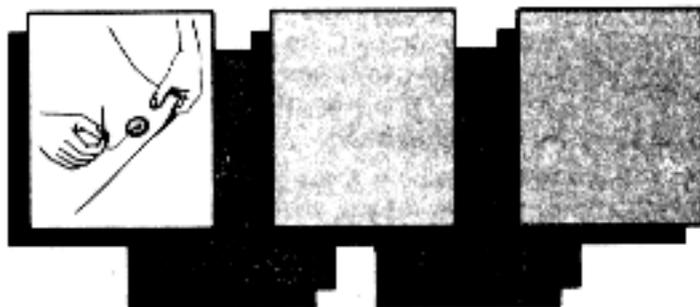
*This manual is a guide for all Army personnel who use, care for, or maintain clothing and equipment issued or sold for personal use. It includes general instructions for cleaning, pressing, repairing, and storing items of the uniform. Uses of bivouac equipment, such as the shelter half, sleeping bag, and poncho, are discussed. Methods of assembling, packing, and using load-carrying equipment are also discussed. The use and care of various items of field equipment issued for special purposes or missions are also covered in this manual. General information, with references for specific information, is included on clothing for use in arctic, tropical, and other special environments.*

### **USER INFORMATION**

*The information, procedures, and equipment described in this manual are current at the time of preparation. Changes in equipment will require changes or revisions of the material presented. Field experience may also suggest changes. The proponent of this publication is the US Army Quartermaster School. You are encouraged to submit recommended changes and comments to improve this manual. Make sure you key your comments to the exact page, paragraph, and line of the text in which the change is recommended. Provide reasons for each comment to ensure understanding and complete evaluation. Write your comments on a DA Form 2028 (Recommended Changes to Publications and Blank Forms) or in a letter, and send them to—*

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## CHAPTER 1

**General Care  
and Maintenance****CLOTHING**

You are responsible for keeping your clothing and equipment in good, useful condition. Your uniform will not look its best and your equipment will not work properly unless they are clean, in good repair, and stored properly. Proper care of your uniform while you are wearing it is important. For example, carry only articles of a suitable size, shape, and weight in your pockets. If you carry something too large or too heavy, you will destroy the tailored shape of your clothing. Cleaning, pressing, repairing, and storing properly are most important for keeping your uniform serviceable and looking its best for as long as possible. You should follow closely the cleaning and care instructions that are attached to most clothing.

**Cleaning.** Clean clothing regularly when it is in use. Dirty clothing wears out quickly because dirt cuts textile fibers and retains moisture from rain, snow, and perspiration.

**Cotton clothing.** Wash cotton clothing,

such as shirts, trousers, and socks, with soap or detergent and hot water, and rinse well. Air- or machine-dry the clothing.

**Wool clothing.** Wash wool clothing, such as socks and glove inserts, in mild soap or detergent and lukewarm or cool water. Stretch the items into shape while they are air-dried. Do not use hot or boiling water.

**Tailored wool clothing.** Wool jackets and trousers and other tailored items must be dry-cleaned. Do not wash tailored wool clothing as it will cause the clothing to lose its shape.

**Coated fabric items.** Special care is necessary for items which have a coating to protect against chemicals, radiation, moisture, and other elements. Hand-wash the coated item, such as a poncho, in warm water and mild soap or detergent using a soft bristle brush. Then rinse it thoroughly, and hang it until completely dry. Do not machine-wash, machine-dry, dry-clean, hot-press, or hot-iron

coated fabric items. Do not use cleaning fluid or bleach on coated items.

**Synthetic fabrics.** Items made of synthetic fabrics should be washed in lukewarm water with mild soap or detergent. Do not use hot water or harsh soaps on synthetic fabrics.

**Water-repellent garments.** Wash water-repellent outer garments, such as raincoats, by hand or machine. Do not use starch. Rinse them thoroughly. Restore water repellency by treating items with the standard water-repellent compound.

**Removing Stains.** Remove stains or soil as soon as possible. The longer the stains remain, the harder they are to remove. When removing stains, start at the center of the stain, and work toward the edges. Table 1-1 provides procedures for removing several kinds of stains from clothing.

**Pressing.** Press clothing after it has been cleaned and all stains have been removed. **DO NOT PRESS DIRTY CLOTHING.** When you press clothing, make sure the temperature setting is adjusted for the type of clothing being pressed.

**Cotton clothing.** Dampen the surface of the clothing and apply the iron directly to it.

**Wool clothing.** Use a damp cloth between the iron and the clothing.

**Synthetic clothing.** Iron clothing with the temperature setting adjusted to the low position on the synthetic scale.

**Repairing.** Repair rips, tears, and frayed edges as soon as possible before they get worse. Replace buttons as soon as possible to avoid losing them and so your clothes will fit properly.

**Repairing rips, tears, and frayed edges.** When you repair a ripped seam (figure 1-1), turn the garment inside out. Then place the two edges together and sew. When you repair a tear (figure 1-2), turn the garment

Table 1-1. Procedures for stain removal.

TYPE OF STAIN	PROCEDURE FOR COTTON FABRIC	PROCEDURE FOR WOOL FABRIC	PROCEDURE FOR SYNTHETIC FABRIC
	<b>BLOOD</b>	Flush and rub stained area with cold water; then wash stain with soap or detergent solution.	Dampen stained area with water. Apply soap or synthetic detergent solution (with ammonia, if available), tamp with brush, and flush with water.
<b>BLOOD (DRIED)</b>	Scrape off top of stain. Dampen stained area with cold water, apply soap or detergent solution (with ammonia, if available), tamp with brush, and flush with water.	Scrape off top of stain. Dampen stained area with cold water, apply soap or detergent solution (with ammonia, if available), tamp with brush, and flush with water.	Scrape off top of stain. Flush stained area with lukewarm or cold water; then, using warm water, wash stain with a soap or detergent solution. If stain remains, sponge with hydrogen peroxide. (Do not use hydrogen peroxide or bleach on colored material.)

<b>FOOD</b>	Dampen stained area with water. Apply soap or detergent solution D (with ammonia, if available), tamp with brush, and flush with water.	Dampen stained area with water. Apply soap or detergent solution D (with ammonia, if available), tamp with brush, and flush with water.	Sponge with cold or lukewarm water. If grease spot remains, launder washable materials in a soap or detergent solution, using warm water. Do not rub material.
<b>FRUIT OR FRUIT JUICE</b>	Use hot water and wash stain while still moist.	Flush stained area with lukewarm water. Apply soap or detergent solution, tamp with brush, and flush out with water. (If available, apply lemon juice or vinegar, and flush thoroughly with water.)	Sponge with cold or lukewarm water. If grease spot remains, launder washable materials in a soap or detergent solution, using warm water. Do not rub material.
<b>GRAVY</b>	Rub stain with cold water; then place a pad or cloth underneath fabric to absorb stain, and rub stain with cleaning fluid. If any stain remains, dry the fabric and rub with a soap or detergent solution. Do not rub excessively, as this may damage the finish of the garment.	Rub stain with cold water; then place a pad or cloth underneath fabric to absorb stain, and rub stain with cleaning fluid. If any stain remains, dry the fabric and rub with a soap or detergent solution. Do not rub excessively, as this may damage the finish of the garment.	Sponge with cold or lukewarm water. If grease spot remains, launder washable materials in a soap or detergent solution, using warm water. Do not rub material.
<b>GREASE OR OIL</b>	Scrape off top of stain; then saturate stained area with cleaning fluid, tamp with brush, and flush with cleaning fluid.	Scrape off top of stain; then saturate stained area with cleaning fluid, tamp with brush, and flush with cleaning fluid.	Scrape off top of stain. Launder washable materials in a soap or detergent solution, using warm water. Do not rub material.
<b>MILK</b>	Dampen stained area with water. Apply soap or detergent solution D (with ammonia, if available), tamp with brush, and flush with water.	Dampen stained area with water. Apply soap or detergent solution D (with ammonia, if available), tamp with brush, and flush with water.	Sponge with cold or lukewarm water. If grease spot remains, launder washable materials in a soap or detergent solution, using warm water. Do not rub material.

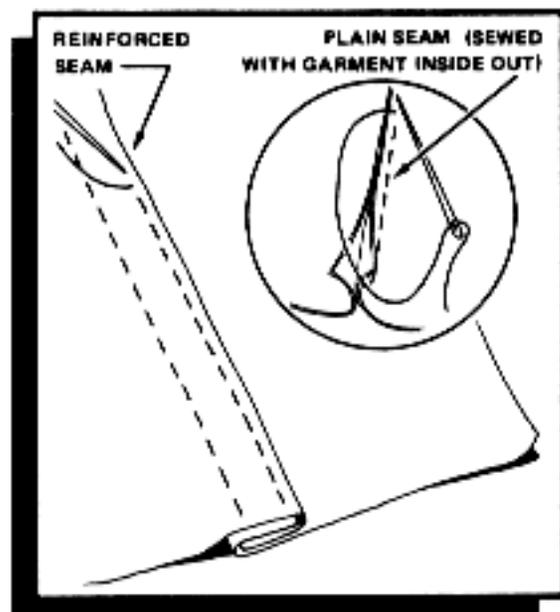


Figure 1-1. Repairing a rip.

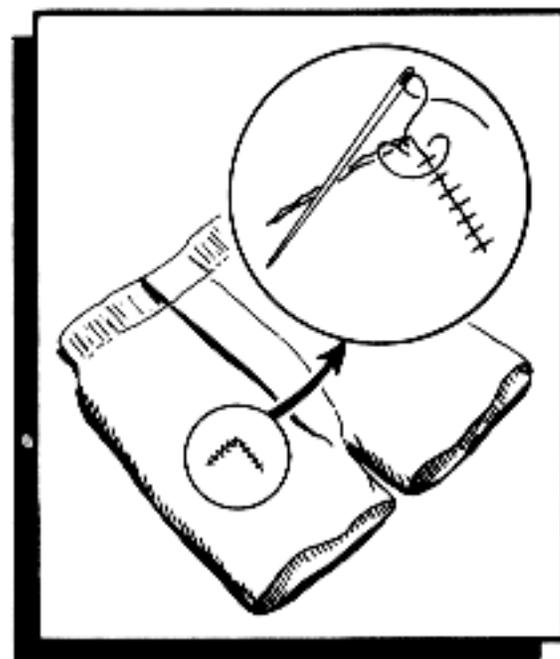


Figure 1-2. Repairing a tear.

inside out, place the two edges together, and sew. When you repair a frayed edge (figure 1-3), turn the edge under and sew.

**Replacing buttons.** Before replacing a button, select thread that closely matches the color of the material. If this is not possible, use the thread you have. Figure 1-4 shows how to replace a button.

**Storing.** Before storing clothing, make sure it is clean and dry. Brush thoroughly, and sun and air-dry all wool and cotton clothing before storing it. This way it will not mildew in humid weather. Use naphthalene or mothballs to protect wool clothing in storage. The clothing and naphthalene or mothballs must be in a closed container to be effective. Before folding coated clothing, make sure it is cool and dry. If possible, fold the clothing so a coated side is against an uncoated side. This will help avoid sticking. Also, make sure it does not come in contact with sharp objects

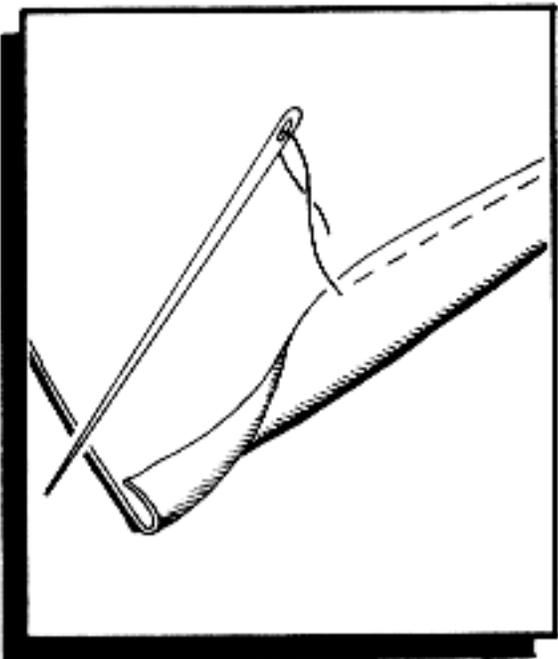


Figure 1-3. Repairing a frayed edge.

Thread a needle, and tie the two ends of thread together.

Insert the needle through the cloth from the inside. Make two or three stitches through the cloth to anchor the end of the thread.

From the outside of the cloth, put the needle through one of the holes in the button. Let the button slide down the thread into position.

To prevent strain on the cloth, hold the button slightly away from the cloth. Stitch through the cloth and holes on one side of the button. Then stitch through the holes on the other side.

When you have made enough stitches to secure the button, bring the needle and thread to the outside of the cloth under the button. Wrap the thread five or six times around the stitches, between the button and the cloth. Stitch through the wrapped thread three or four times, and push the needle through the cloth to the inside. Lock the stitches with a knot.

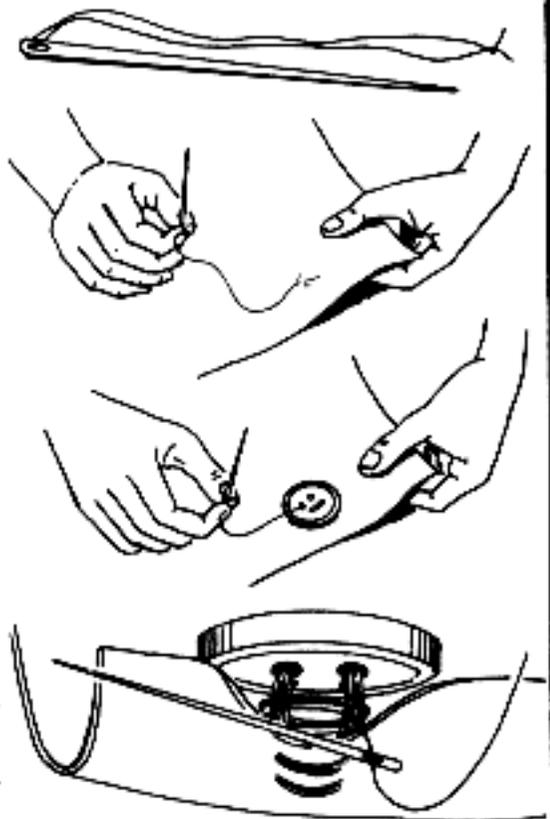


Figure 1-4. Replacing a button.

that may cause rips or tears. When possible, dust coated clothing with talcum before storing.

## BOOTS, SHOES, AND INSOLES

Do not wear the same pair of boots or shoes every day. Give the footwear a chance to air between wearings. Wear the ventilating insoles so that air can circulate under your feet.

**Breaking In.** There are three methods which will help to break in your boots. Each of the processes will leave the boots soft, pliable, and comfortable on the foot. Choose the method which is easiest for you to do.

- The first method is to immerse the boots in warm water, preferably while you are wearing them, for no more than 30 minutes. While the boots are in the water, manipulate the leather often. Remember when wet boots are drying, the toes should

be stuffed with paper. Allow the boots to dry with no added heat.

- The second method is to apply alcohol to the leather. Hand manipulate the leather to soften it. Stuff the toe with paper, and let the boot dry.
- The third method is to rub the boot with saddle soap. Apply it generously and frequently. Follow the application with a brisk brushing. The more often the soap is used, the softer and more pliable the leather becomes.

**Cleaning and Drying.** Scrape dirt or mud from boots or shoes with a flat stick, brush, or dull instrument which will not cut leather or rubber. Wash the boots or shoes with mild soap and very little water. Remove all soapsuds, and wipe the insides of the footwear with a clean cloth. Stuff paper in the toes of wet footwear to keep the leather from shrinking. Dry the boots or shoes slowly in a warm, dry place. **DO NOT DRY FOOTWEAR BY EXPOSING IT TO HOT SUN, FIRE, OR OTHER STRONG HEAT.** This may damage the rubber or leather. Rub saddle soap into the boots or shoes before they are completely dry to help soften the leather. Wash the ventilating insoles with a warm solution of mild soap or detergent, and let them air-dry. **DO NOT BOIL THE INSOLES.**

**Polishing.** Use only stains and polishes that match the color of the boots or shoes.

**Waxing.** Apply silicone sealants, boot and shoe oils, greases, and waxes if necessary. Be sure leather is completely dry before applying these treatments.

**Repairing.** The direct molded sole is nonrepairable, except for the heel. You should have the heels replaced after wear of seven sixteenths of an inch or more.

## CANVAS AND WEB EQUIPMENT

As with your clothing, you are responsible for keeping your canvas and web equipment clean and in good repair.

**Cleaning.** Dip canvas and web equipment vigorously in a pail of warm water containing soap or detergent. This makes it last longer and stops it from losing color. If dirty spots remain, scrub the spots with a white or colorfast cloth, using warm, soapy water or detergent solution. Do not use chlorine bleach, yellow soap, or cleaning fluids which will discolor the equipment. Dry the equipment in the shade or indoors. Direct sunlight causes it to lose color. Do not attempt to dye web equipment. Never machine-wash or machine-dry canvas or webbing.

NOTE: Certain items, such as the carrier for the field protective mask and the small arms ammunition case, may be provided with fiberboard or plastic stiffeners. If so, clean these cases with a damp, soft brush and cool water only.

**Repairing.** Repair small rips and tears in canvas equipment as soon as you find them. Use the methods described earlier in this chapter. Replace damaged or missing keepers on the suspenders, small arms ammunition cases, first aid dressing cases, intrenching tool carrier, and canteen cover.

## NETTING

Wash netting with a solution of warm water and mild soap or detergent. Repair small tears and holes by placing pieces of adhesive tape or waterproof tape over both sides of each hole while the netting is lying flat. **DO NOT DRAW AND TIE THE EDGES OF THE HOLE TOGETHER, EXCEPT IN AN EMERGENCY.**

## FASTENERS

Besides buttons, the Army uses four other main types of fasteners: snap fasteners, slide fasteners (zippers), hook-and-pile fasteners, and buckles. If you use these fasteners correctly, your uniforms and equipment will fit properly and last longer.

**Snap Fasteners.** Be careful when you open snap fasteners. Place your thumb and forefinger close to the fastener, between the two layers of cloth. Pry the two parts of the fastener apart with your fingers. **DO NOT TUG AT THE CLOTH.**

**Slide Fasteners (Zippers).** Always use zippers carefully. When a zipper gets stuck, do not yank it or tug at it. Check to see if fabric is caught in the track. If it is, unzip the zipper about an inch, smooth out the fabric, and try again. When the zipper works stiffly, rub a thin coating of wax or lead-pencil graphite on each side of the track. After applying the wax or graphite, work the zipper back and forth a few times. The wax or graphite will lubricate the zipper and allow it to open and close more easily. Close the zipper before washing the garment.

**Hook-and-Pile Fasteners.** These fasteners are used on equipment and clothing. Each is made up of two sections of tape. One section contains many small nylon hooks; the other section is a woven pile with

many small nylon loops. When the two sections are pressed together, the hooks catch the loops on the pile, resulting in a tight closure. Open the fastener by firmly pulling one tape section from the other.

**Buckles.** Buckles are used to connect the ends of belts and adjustment straps. The Army uses three main types of buckles: a D-ring with a tongue, a slide buckle, and a hook-type fastener. To maintain these buckles—

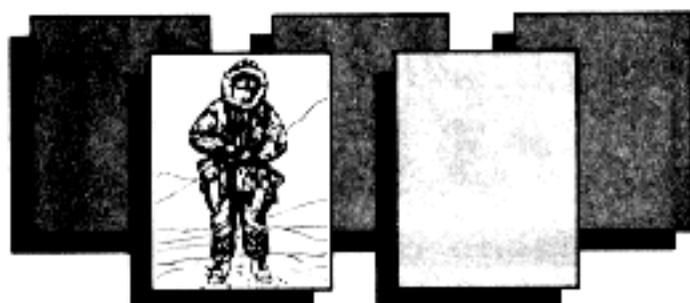
- Make sure buckles are not bent. If they are, gently try to straighten them.
- Watch for rough spots on your buckles. They can snag and tear your clothing.

## COATED ITEMS

**DO NOT MACHINE-WASH, MACHINE-DRY, DRY-CLEAN, HOT-PRESS, OR HOT-IRON COATED ITEMS.** Wipe dirty coated items with a clean cloth. Wash them by hand using a soft brush, warm water, and mild soap or synthetic detergent. After rinsing the items, air-dry them. **DO NOT USE DIRECT HEAT TO DRY COATED MATERIALS AS IT WILL CAUSE THEM TO DRY OUT AND CRACK.** Make sure that such things as oil, grease, acid, or insect repellent are washed off as soon as possible.

## CHAPTER 2

## Protective Clothing and Equipment



### REASONS FOR WEARING PROTECTIVE CLOTHING

You wear protective clothing to cover and protect your body. The most important reason you wear clothing is to keep your body comfortable so that it can function normally. In hot weather, the best way to keep cool is to put on lightweight, light-colored, and loose-fitting clothing. This clothing will help keep the heat and sunlight away from your body. In cooler climates, the best way to stay warm is to dress in layers. If you get too warm, you can take off a layer of clothing, or you can ventilate the clothing by adjusting openings in the garments. The protective clothing and body armor furnished to you, when required in your duty assignment, will help protect you against both natural and man-made hazards. You will have the best clothing which can be produced to maintain your personal safety, efficiency, and health.

### COLD WEATHER CLOTHING

Cold weather clothing is designed with removable insulation, several layers of material, and devices for ventilation. Insulation slows the flow of heat from the body to the outside. Layered material traps warm air between layers of clothing. And, ventilation allows the outside air to cool the overheated areas through openings in the clothes, such as cuffs, flaps, and front closures.

**Cold-Wet Ensemble.** Cold-wet conditions occur when temperatures are near freezing and when changes in day and night temperatures cause alternate freezing and thawing. The freezing and thawing are often accompanied by rain and wet snow, causing the ground to become muddy and slushy. The cold-wet ensemble (figure 2-1) protects you against the hazards of a cold-wet environment. The main components of this ensemble



Figure 2-1. Cold-wet ensemble.

are full-length underwear, wool socks, wool shirt and trousers, wind-resistant coat and trousers, coat liner, insulated cap, mittens, and black rubber insulated boots. It is important that this clothing be ventilated when necessary to keep the body from perspiring. If the clothing becomes wet, it will not protect the body as well. To care for each item, read the label on the item to find out what kind of material it is. Then, refer to chapter 1 for care of this material.

**Cold-Dry Ensemble.** Cold-dry conditions occur when average temperatures are lower than 14°F. The ground is usually frozen, and snow is often in the form of dry, fine crystals. The cold-dry ensemble (figure 2-2) protects you against the lower temperatures, high winds, and snow of a cold-dry environment. In addition to the components of the cold-wet ensemble (with the exception of the wool trousers), the components of this ensemble are trouser liners, parka and parka liner,



Figure 2-2. Cold-dry ensemble.

winter hood, and white rubber insulated boots. To care for each item, read the label on the item to find out what kind of material it is. Then, refer to chapter 1 for care of this material.

**Cold Weather Boots.** There are two basic types of boots for use in cold weather. The black rubber insulated boots (figure 2-3) are part of the cold-wet ensemble. The white rubber insulated boots (figure 2-4) are part of the cold-dry ensemble. The white boots have additional insulation to provide greater protection. Although insulation provides protection, feet will get very cold if allowed to rest for long periods of time.

**Cleaning.** The boots may be cleaned by washing the outside with mild soap and rinsing with water. **DO NOT APPLY OIL-BASED PAINT OR SOLVENT-BASED POLISH TO ANY PART OF THE BOOT. PAINT OR POLISH WILL CAUSE THE RUBBER TO DETERIORATE.**



Figure 2-3. Black rubber insulated boot.



Figure 2-4. White rubber insulated boot.

**Repairing.** Punctures, tears, cuts, or holes must be repaired promptly (within 1 hour, if possible) in order to prevent severe damage to the insulation. To make an emergency repair of black or white boots, use the maintenance kit, gray, rubber patch (NSN 8465-00-753-6335), and proceed as follows:

- Clean the area to be patched.
- Buff the area thoroughly with abrasive.
- Tear off the end of the tube of cement, and apply a coat of cement to the area to be patched. Allow the cement to dry 3 to 5 minutes.
- Twist and tear off the backing from the patch (do not touch the fresh surface).
- Press the patch firmly in place.

If a repair kit is not available, make a temporary repair by patching the hole with a cold tire patch or with tape, such as rubber

tape, friction tape, or scotch tape. Even chewing gum may serve as a temporary patch. The important thing is to seal the hole as quickly as possible so that the insulation will not get wet.

## TEMPERATE UNIFORM

The temperate uniform (figure 2-5) is designed for use in combat, field, and garrison environments where the average temperature does not fall below 40°F. This uniform consists of coat, trousers, field cap, and boots. The bush-type coat has breast and lower pockets. The trousers have four standard-type pockets and a cargo pocket on each leg. The uniform is loose-fitting, allowing body ventilation. Reinforcement patches are at the elbows, knees, and seat. The fabric is a four-color, disruptive camouflage pattern known as the "woodland" pattern. To care for each item, read the label on the item to find out



Figure 2-5. Temperate uniform.



Figure 2-6. Day desert uniform.

what kind of material it is. Then, refer to chapter 1 for care of this material.

### DESERT ENSEMBLE

The desert ensemble is actually two uniforms. The day uniform (figure 2-6) is of the same design as the temperate uniform with two exceptions. The coat has an internal back yoke, and the hat is similar to the standard jungle hat. The fabric is a six-color, desert camouflage pattern. A hooded parka with liner and trousers make up the night desert uniform (figure 2-7). It is worn over the day uniform. The color is a light green with dark green grid print. To care for each item in this ensemble, read the label on the item to find out what kind of material it is. Then, refer to chapter 1 for care of this material.

### WET WEATHER ENSEMBLE

The wet weather ensemble (figure 2-8) consists of coated nylon parka and trousers. Use this clothing instead of the poncho when you need more freedom of movement in rain or wet snow. It is sized to fit over cold-wet clothing. Use one size smaller if it is not to be used over cold-wet clothing. Avoid moisture buildup in the clothing you wear underneath the rain suit by wearing fewer underclothes or by ventilating body heat to the outside. To care for the wet weather ensemble, refer to the coated items paragraph in chapter 1.

### CHEMICAL PROTECTIVE ENSEMBLE

The chemical protective ensemble (figure 2-9) consists of a two-piece, two-layer overgarment (coat and trousers), helmet cover, glove set, footwear covers, and protective mask. It protects the wearer against chemical agent vapors, aerosols, and droplets of liquids; biological agents; toxins; and radioactive alpha and beta particles.



Figure 2-7. Night desert uniform.



Figure 2-8. Wet weather ensemble.

**Overgarment.** The overgarment is packaged in a sealed vapor-barrier bag that protects it from rain, moisture, and sunlight. Instructions on use of the overgarment are printed on the label. The overgarment should not be removed from the bag until it is to be used. The coat and trousers are made of a two-layer material. The outer layer is nylon-cotton, and the inner layer is charcoal-impregnated polyurethane foam. The overgarment is designed to be worn over the uniform. However, in high temperatures or when soldiers are engaged in heavy work, it may be worn directly over the underwear. The overgarment cannot be decontaminated or reimpregnated. It is to be discarded when it becomes contaminated or unserviceable.

**Helmet Cover.** This cover is intended to provide the personnel armor system ground troop (PASGT) helmet with protection from chemical and biological contamination. It is made of one piece of olive-green, butyl-coated



Figure 2-9. Chemical protective ensemble with M17A1 mask and hood.

## PROTECTIVE MASKS

nylon cloth. It is gathered at the opening by an elastic band sewn in the hem.

**Glove Set.** The gloves protect against liquid chemical agents and vapor hazards. They also keep disease-carrying insects and radioactive dust away from the skin. Each glove consists of an outer glove for protection and an inner glove for absorption of perspiration. The outer glove is made of an impermeable black butyl-rubber. The inner liner glove is made of white, thin cotton and can be worn on either hand. If the outer glove is punctured or torn, it must be replaced.

**Footwear Covers.** The footwear covers are worn over standard combat boots. They protect the feet from contamination by all known chemical agents, vectors, and radiological dust particles. The overboots are impermeable and have unsupported butyl-rubber soles and butyl-sheet rubber uppers. When the cold-weather insulated boots are worn, the overboots are not necessary. The insulated boots provide adequate protection in a chemical environment.

Protective masks are available in two categories—the field protective mask issued to every soldier, and tank and aircraft protective masks provided to crews of armored vehicles and aircraft. These masks protect the face, eyes, and respiratory tract against field concentrations of chemical and biological agents in the form of gases or aerosols. They protect the face and eyes against contamination from splashes and liquid droplets of the agents.

**M17A1/M17A2 Field Chemical/Biological Mask.** The M17-series mask (figure 2-10) is the standard field mask. It does not protect against ammonia vapors or carbon monoxide, and it must not be used for fire fighting. Filter elements, in the cheeks of the facepiece, filter contaminated air to remove the agents. The mask does not provide breathable air (oxygen); so when the air has a low oxygen content, as in tunnels or caves or when there is a high level of burning smoke mixtures, the mask will not provide protection. Accessories for the field mask are the ABC-M6A2 field

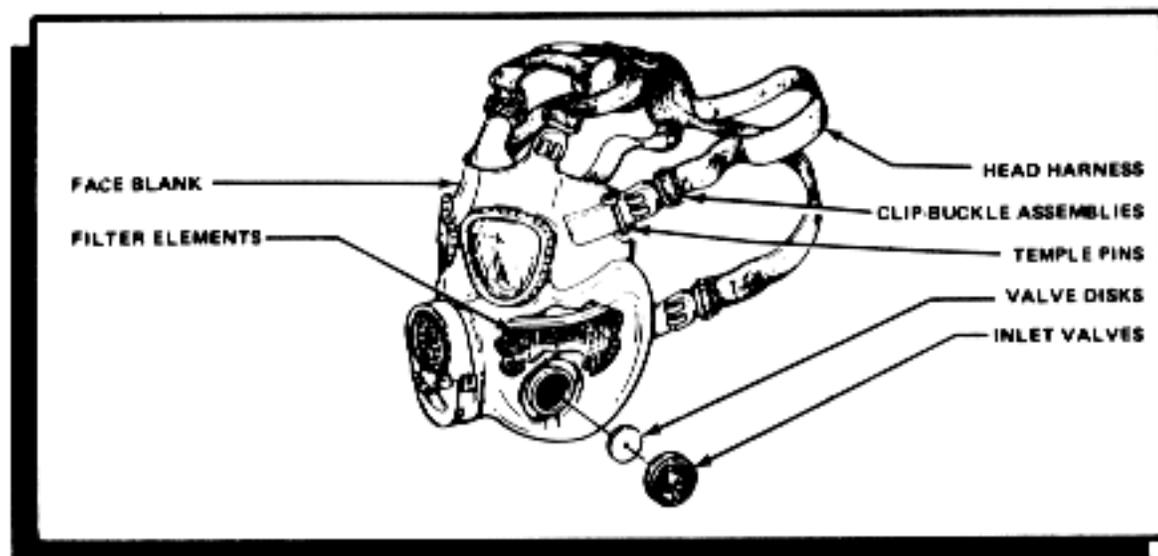


Figure 2-10. M17-series mask.

protective mask hood, M4 winterization kit, and optical inserts for those who need them.

**M25/M25A1 Tank Chemical/Biological Mask.** The M25/M25A1 masks (figure 2-11) are specially designed for crews of armored vehicles. Like the M17 series masks, these masks protect against all known chemical and biological agents in vapor or aerosol form. The only difference between the two masks is that the M25A1 has a higher forehead tab. When used in a tank or other armored vehicle, the mask is connected to a filter unit which forces temperature-conditioned air to the facepiece. This increases protection and reduces stress when worn in hot weather. When the mask is worn outside the tank, the wearer inhales air through the M10A1 cannister. A microphone assembly in the mask allows the wearer to communicate through the vehicle communications system. Accessories include the ABC-M5 mask hood, M3 winterization kit, antifogging kit, and optical inserts. The mask

and accessories are stored in the M13A1 carrier.

**ABC-M24 Aircraft Chemical/Biological Mask.** This mask (figure 2-11) protects personnel while in aircraft or on the ground against all known chemical and biological aerosols and vapors. It can be attached to the aircraft oxygen supply system by using an M8 adapter kit. The facepiece is not force ventilated as it is for the tank mask. A microphone assembly is in the nosecup. Accessories for this mask include an antifogging kit, M2 antiglare eyelens outsert, M3 winterization kit, M7 hood, and optical inserts when needed.

**Care.** When not in use, all masks should be kept clean and dry and stored in their carriers. To clean any type of mask, use a clean cloth that has been dipped in warm, soapy water and wrung almost dry. To rinse the mask, wipe it with a clean, damp cloth. Dry the mask with a lint-free cloth, and then air-dry it. Detailed information on the care and use of the field protective mask is in

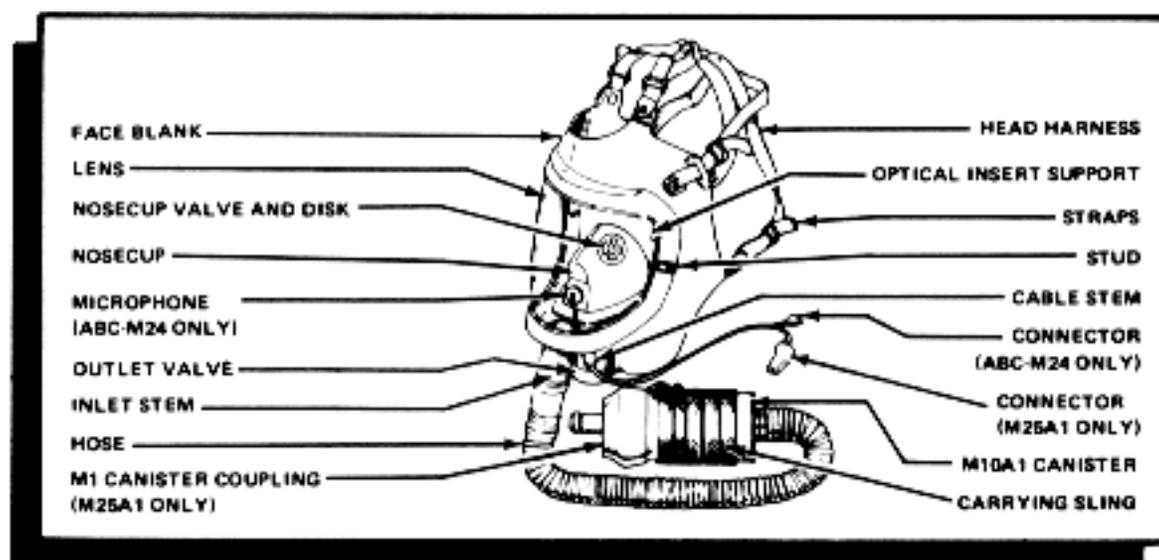


Figure 2-11. ABC-M24 and M25A1 mask.

TM 3-4240-279-10. Detailed information on the care and use of the tank and aircraft masks is in TM 3-4240-280-10.

**Carrying Methods.** There are two recommended positions for carrying protective masks with the load-carrying equipment (figure 2-12). Use the method which is best for you under the conditions in which you are operating or as prescribed in your unit standing operating procedure.

## ARMOR VEST

Approximately 75 percent of all combat casualties are caused by fragments from mines, mortar shells, grenades, and artillery fire. The armor vest (figure 2-13) helps protect you from these hazards by slowing down the missile fragments. Multiple layers of material in the vest form a strong, pliable barrier. A fragment may penetrate the outer layer of the vest, but it is slowed down and eventually stopped by the inner layers. **THE VEST DOES NOT PROTECT YOU AGAINST SMALL ARMS FIRE.**

**Design.** The armor vest covers your upper body. The three-quarter collar protects the neck and throat areas. The vest closes in front with a hook-and-pile fastener strip. Self-adjusting elastic webbing on the sides provides flexibility. Cloth stops on the inside prevent the elastic webbing from stretching too far. The outer and inner shells of the vest are made of water-repellent ballistic nylon. The outer shell is camouflage printed. The filler is made of water-repellent Kevlar.

**Fit.** Tables 2-1 and 2-2 show the vest size you should select based on your chest or bust measurements. Check the fit while you are bending, stooping, and kneeling. If your vest is too loose, try the next smaller size. If it is too tight, try the next larger size. Maximum protection is achieved only when you wear the vest with the three-quarter collar up and the front hook-and-pile fastener properly closed. Do this by laying the right side over the left so that the full length of the right edge meets the flap seam inside the flap. Fold the flap, making sure that the flap completely covers the pile tape closure. Make sure that

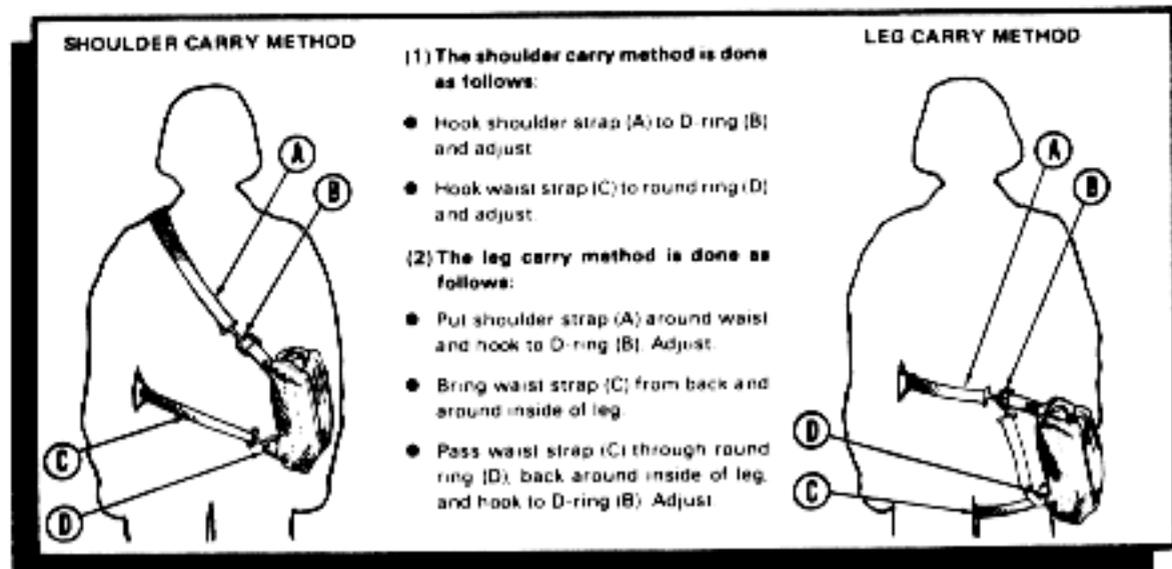


Figure 2-12. Carrying the field protective mask.



Figure 2-13. Armor vest.

all snaps of the shoulder pads are securely fastened.

**Wear.** Wear the armor vest for training or combat missions. When you are not wearing a garment over the vest, you may wear the straps of load-bearing equipment under or over the shoulder pads. Wear the vest as

indicated with the following uniforms or ensembles:

*Utility (field) uniform and desert ensemble.* Wear the vest over your coat and under any additional layers of clothing.

*Cold-wet ensemble.* Wear the vest over your field shirt and under the field jacket with liner.

*Cold-dry ensemble.* Wear the vest over the field shirt and under the field jacket with liner or the parka with liner.

**Inspection.** Examine your vest often for tears, cuts, snags, or other damage to the outer cover and elastic webbing which could make the vest unserviceable. If such damage is evident, turn your vest in as soon as possible. If the ballistic material becomes creased and folded inside the outer cover, try to smooth it out by hand. Try to remove lumps or bunches by inserting your hands through the armholes and shaking the ballistic material back into position. If you cannot smooth out the filler material, **TURN IN THE VEST.**

**Cleaning Methods.** Keep your vest clean to prolong its protective life. Brush off mud and loose dirt. Wet the vest thoroughly, and apply soap or detergent solution. Scrub the vest vigorously; then rinse it thoroughly in warm

Table 2-1. Armor vest sizes—men.

IF YOUR CHEST	
MEASURES —	TRY SIZE —
33 inches or less _____	X-SMALL
between 33 and 37 inches _____	SMALL
between 37 and 41 inches _____	MEDIUM
between 41 and 45 inches _____	LARGE
45 inches or more _____	X-LARGE

Table 2-2. Armor vest sizes—women.

IF YOUR BUST	
MEASURES	TRY SIZE —
33 inches or less _____	X-SMALL
between 33 and 38 inches _____	SMALL
between 38 and 42 inches _____	MEDIUM
42 inches or more _____	LARGE

water to remove all suds. After rinsing, air-dry the vest. **KEEP THE VEST AWAY FROM DIRECT HEAT AND OPEN FLAME.**

**Storing Procedures.** When storing the vest—

- Clean it thoroughly.
- Close the hook-and-pile fastener.
- Place it in a box, a carton, or an open bin located inside a building or tent.
- Cover it with a cloth or plastic sheet to keep out dust, dirt, or moisture.
- Do not fold it.

#### HELMET, GROUND TROOP'S, STEEL, TYPE 1

This helmet (figure 2-14) is one of two used by ground troops. It is used with the chin strap and helmet liner. Although it is a sturdy item that can withstand rough treatment, you should not use it as a cooking pan; heat softens the metal, weakens the helmet,

and reduces the protective qualities. Also, the helmet should not be used as a seat, a shovel, or a hammer.

**Chin Strap.** The chin strap (figure 2-15) helps hold the helmet on your head during combat-type activities. Center the chin strap on your chin, and adjust the tension until it is comfortable.

**Replacement.** If your helmet has the ball-and-hook chin strap, replace it with the webbing cup. To do this, remove the ball-and-hook chin strap by prying up the metal tabs with a screwdriver or knife. **CAUTION: To avoid injury, point the screwdriver or knife away from you.** Attach the chin strap with the webbing cup by snapping the slanted hook portion of each buckle over one of the D-rings attached to each side of the helmet. Make sure the hook is slanting downward toward the front and the adjusting tabs are to the outside. **CAUTION: The chin strap with the webbing cup is for ground troops only. It is not designed for use by parachutists.** Information for parachutists is in TM 57-220, Technical Training of Parachutists.



Figure 2-14. Helmet, ground troop's, steel, type 1.

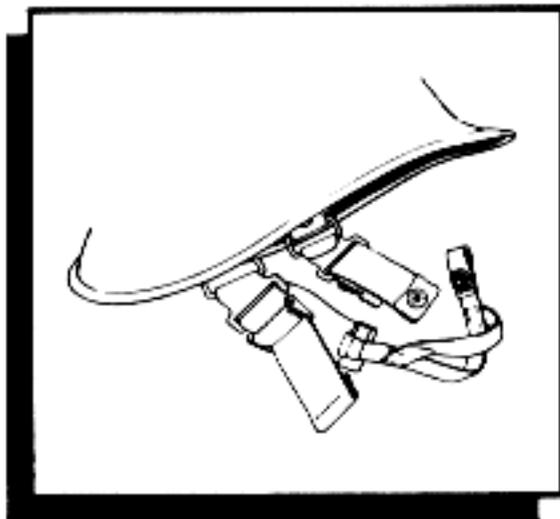


Figure 2-15. Chin strap.

**Cleaning.** Clean the chin strap with mild soap and warm water, and air-dry it.

**Helmet Liner.** Wear the ground troop's helmet liner (figure 2-16) with the ground troop's helmet for comfort and added ballistic protection. You may also wear it, without the helmet, as a head covering. The liner includes a six-point suspension system made up of cotton webbing with six slide fastener clips attached. The headband is attached to the suspension webbing. There are also three small buckles attached to the neckband. Clean the helmet liner with mild soap and warm water. Rinse and dry it thoroughly. Clean headbands, neckbands, and chin straps by scrubbing them with a cloth and soapy water. Rinse them thoroughly, and let them air-dry.

**Liner suspension system.** The helmet liner suspension system, sometimes called the cradle (figure 2-17), is made up of three adjustable web straps. Each strap has a buckle for adjusting the liner to the proper height on your head. The liner may be issued with a fixed or detachable suspension system. The fixed system is attached with rivets. The

detachable system uses studs attached to the liner and clip fasteners attached to a fixed web strap to connect the suspension system to the liner. If your liner has the detachable system, attach it as follows:

- Place the suspension web straps in the liner with the three web strap buckles toward the rear of the liner.
- Grasp a web strap and clip fastener, and slide the fastener over the stud. Pull downward until you hear a click.
- Repeat the procedure for the remaining five clips.

**Liner headband.** The helmet liner headband (figure 2-18) is a leather-lined web strap. It has six metal clips and a buckle for attaching and adjusting the headband to the liner. To install the headband in the liner—

- Open the six headband clips, and adjust the headband to a size larger than your head size.
- Put the headband on your head, making sure the leather portion is

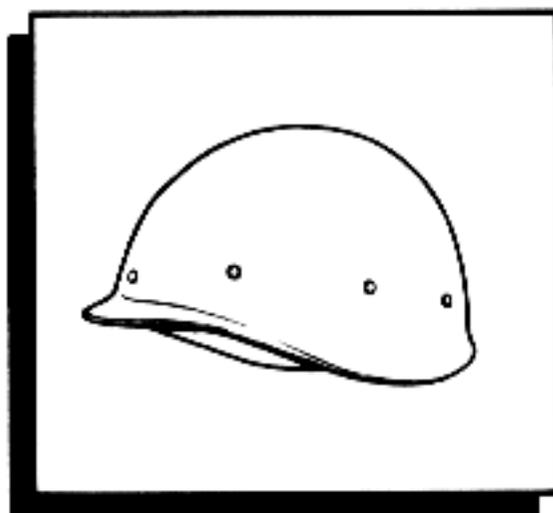


Figure 2-16. Helmet liner.

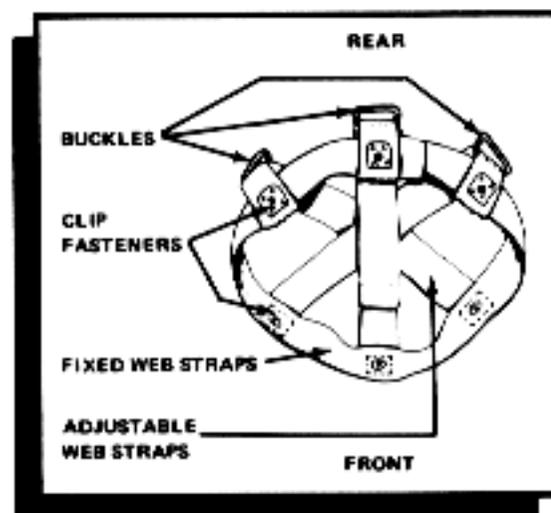


Figure 2-17. Liner suspension system.

against your forehead, the buckle is at the back, and the clips are open and are facing upward.

- Adjust the headband to a snug fit. Then remove the headband, and insert it into the liner so that the clips are toward the crown of the liner and the buckle is at the back.
- Place the clips over the fixed web strap of the head suspension band, making sure the two front clips are centered.
- Close all clips.
- Adjust the height of the liner by lengthening or shortening the three adjustable straps of the cradle inside the liner. Adjust the straps by using the three buckles toward the rear of the liner.

*Liner neckband.* The helmet liner neckband (figure 2-19) is a web strap with a long adjusting tape sewn to each end and a

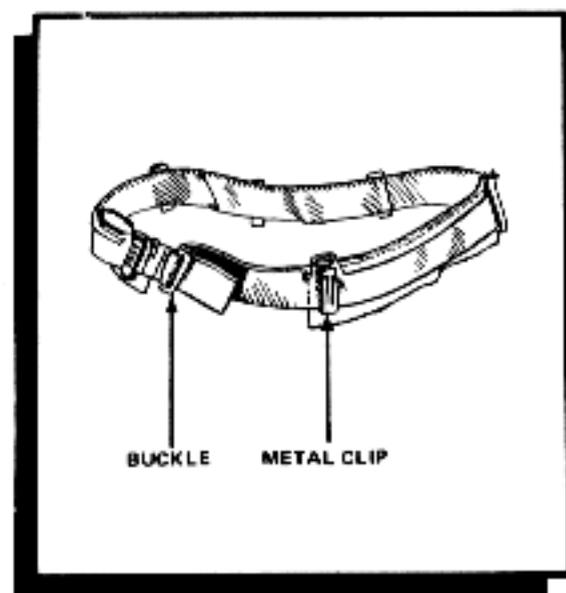


Figure 2-18. Helmet liner headband.

short adjusting tape sewn to the middle. The smooth surface of the neckband is opposite that to which the tapes are sewn. To install the neckband, refer to the figure, and proceed as follows:

- Thread the two long tapes into the small buckles at each side of the liner, making sure the smooth surface of the neckband faces the front of the liner.
- Thread the short tape into the rear buckle.
- Make certain all tapes are straight and free of kinks.
- Put the liner on your head, and adjust to fit by tightening the long tapes uniformly so that the neckband fits snugly and comfortably against the back of your neck.

*Camouflage Cover.* The camouflage-patterned cover (figure 2-20) is reversible and has slits for inserting twigs or foliage for

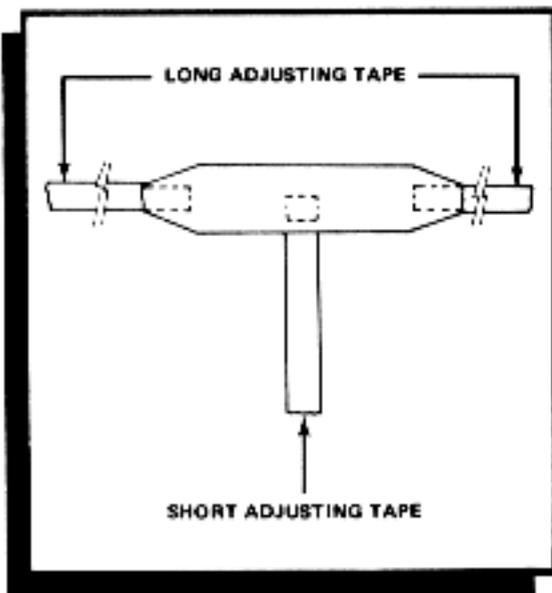


Figure 2-19. Liner neckband.

additional camouflage. Attach the cover by placing it over the helmet, tucking the cover flaps inside the helmet and inserting the helmet liner into the helmet.

### HELMET, PERSONNEL ARMOR SYSTEM FOR GROUND TROOPS

This helmet (figure 2-21), along with your armor vest, makes up your body armor system. It will help protect you against fragments from exploding munitions. The helmet is issued in extra small, small, medium, and large sizes. It is made of a high strength Kevlar laminate. The strength of this material is close to that of steel. It provides better ballistic protection than does steel. The helmet has four single parts: helmet shell, suspension band, headband, and chin strap. The suspension band and chin strap are already installed. All you need to do is adjust and install the headband and fasten the chin strap.

**Headband.** The headband is a padded, leather-lined web strap. It has six metal clips used to attach the headband to the fixed web strap in the helmet. There is also a rear buckle to adjust it to your head size. To fit the headband—

- Open all headband clips.
- Make it larger than your size.
- Put the headband on your head, making sure that the leather is against your forehead. The buckle should be at the back, and the clips should be open and face upward.
- Adjust the headband until it fits snugly, then take it off.
- Insert the headband into the helmet so the clips are toward the rim of the helmet. Make sure the buckle is at the back.
- Slip the clips over the fixed web strap, and center the two front clips. Close all clips.



Figure 2-20. Camouflage cover on helmet.



Figure 2-21. Helmet, personnel armor system for ground troops.

- Place the helmet on your head. If it sits too high, adjust the drawstring tab toward the crown of the helmet. If it sits too low, adjust the drawstring tab toward the rim of the helmet.

**Chin Strap.** The chin strap consists of a web strap with an open chin cup, two adjusting buckles and tabs, and one Lift-the-Dot snap fastener and tab. After adjusting the helmet

on your head, fasten the snap of the chin strap, making sure the small strap is in front of the chin. Grasp the adjustment tabs on each buckle and pull evenly until the chin cup is snug and comfortable. REMEMBER: THIS SNAP FASTENER CAN ONLY BE OPENED BY PULLING THE SNAP TAB DIRECTLY DOWN.

## CHAPTER 3

**Bivouac Equipment****PONCHO**

The poncho (figure 3-1) is made of waterproof-treated nylon cloth. It is rectangular in shape and has a hood and neck opening in the center. There is a drawstring in the hood and one at the waist.

**Care.** To care for the poncho, follow the instructions given in the coated items paragraph in chapter 1.

**Use.** The poncho may be used as a rain garment, shelter, ground cloth, or sleeping bag.

**Rain garment.** Wear the poncho as a rain cape with your arms inside or with your arms outside for freedom of movement (figure 3-2). To put on the poncho, slip it over your head and close the snap fasteners on each side. If

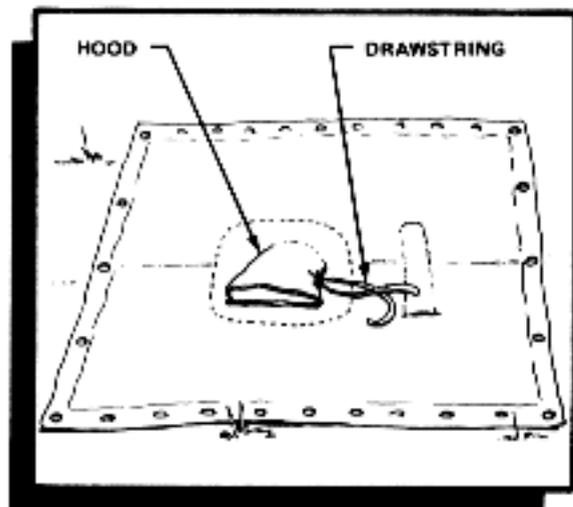


Figure 3-1. Poncho.



Figure 3-2. Poncho worn as rain garment.

you wear the poncho hood, adjust the drawstring for proper fit. Wear the helmet under the hood.

**Shelter.** Various types of shelters and lean-tos can be made by attaching ponchos to trees, tree branches, bushes, sticks, or poles. Always dig a ditch under the bottom edge of the shelter to drain off rainwater. Pitch the poncho with the hood closed, and use as a shelter for one person. Attach two ponchos to each other to make various types of shelters (figure 3-3).

**Ground cloth.** You can use the poncho as a ground cloth (figure 3-4) for shelters, and as a waterproof barrier between the ground and a sleeping bag.

**Sleeping bag.** Use the poncho as a sleeping bag (figure 3-5) when the temperature is 50°F or above. Use it with a blanket or poncho

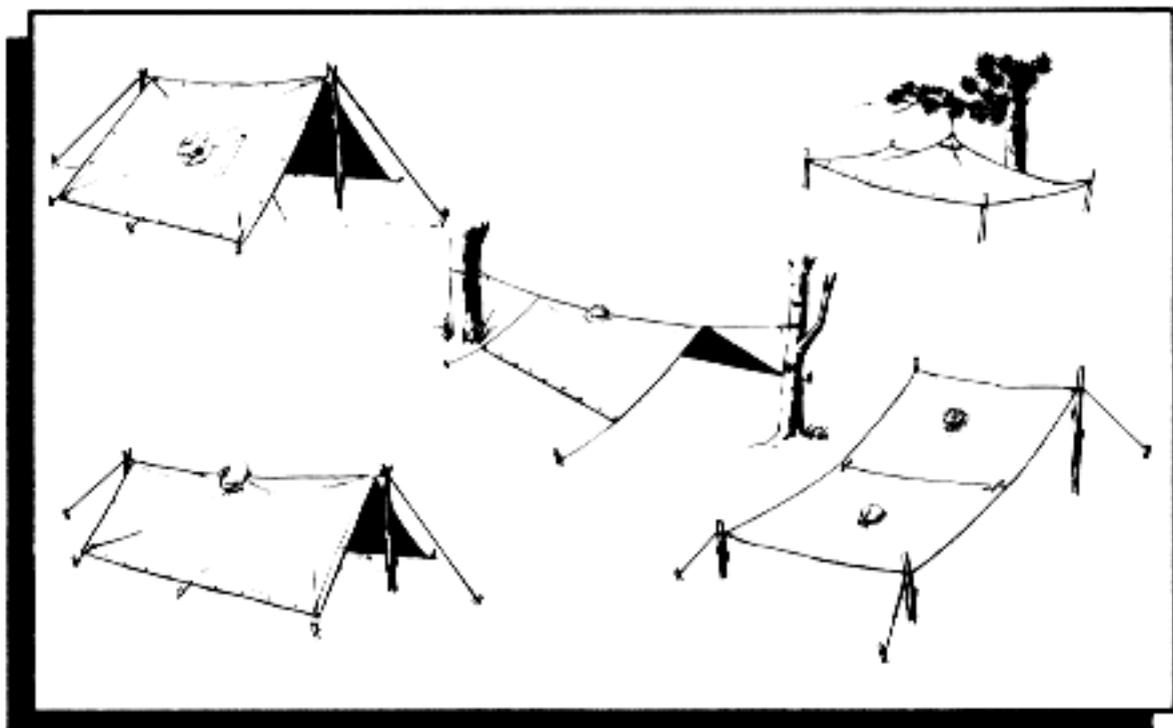


Figure 3-3. Poncho in miscellaneous shelter configurations.

liner for extra warmth. Spread the poncho flat on the ground, making sure the hood opening is tightly closed. If you use a blanket, place it on top of the poncho, fold the poncho and blanket in half lengthwise, and close the snap fasteners. Instructions for attaching the poncho liner to the poncho are on pages 3-4 and 3-5. If you use the poncho without a blanket or liner, snap the sides together and tuck the foot end under to keep your feet from sticking out. **CAUTION: Do not close the snap fasteners when the poncho is used as a sleeping bag in combat areas. It cannot be opened quickly!**

**Folding and Packing Methods.** When possible, completely air-dry the poncho before folding it. If it is necessary to fold the poncho while it is wet, unfold, air-dry, and refold it as soon as possible. The poncho can be folded

and carried with your load-carrying equipment. Fold it in any manner, and carry it in the duffel bag or the field pack if space permits. Take care not to press it against sharp or rough objects which may cause damage. Fold the poncho for carrying on the individual equipment belt as shown in figure 3-6. In some commands you may be told to roll up the poncho to prepare it for carrying.

## PONCHO LINER

The poncho liner (figure 3-7) is similar in size and shape to the poncho. It is made of polyester batting sandwiched between two panels of camouflage-patterned, lightweight nylon fabric. It has eight tie tapes to attach it to the poncho.

**Care.** Hand wash the liner with lukewarm

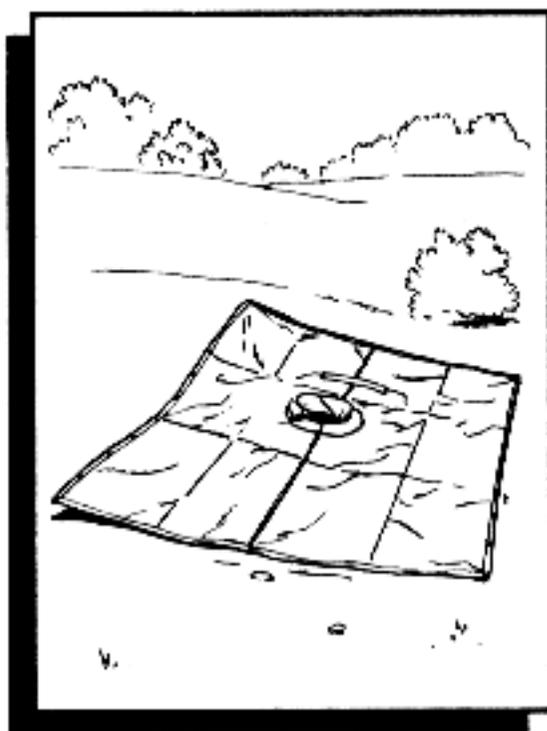


Figure 3-4. Poncho used as a ground cloth.



Figure 3-5. Poncho used as a sleeping bag.

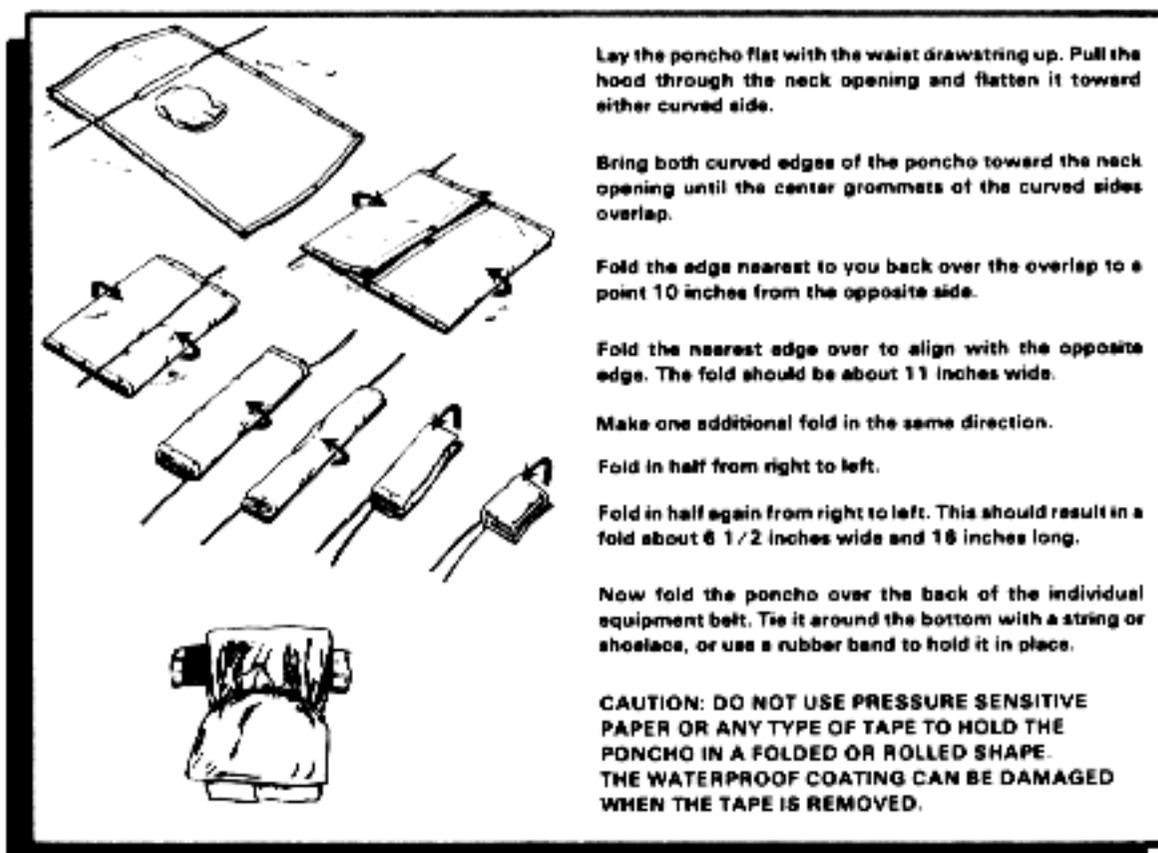


Figure 3-6. Folding poncho for wear on individual equipment belt.

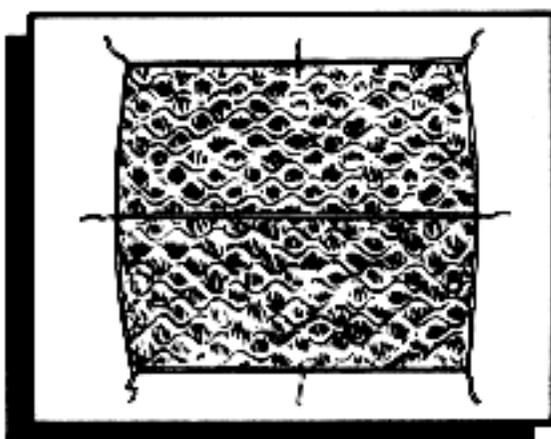


Figure 3-7. Poncho liner.

water and a mild soap or detergent. **DO NOT BOIL IT OR HAVE IT DRY-CLEANED.**

*Use.* The poncho liner may be used as a blanket or with the poncho as a sleeping bag when the temperature is 50°F or above. Figure 3-8 shows how to attach the liner to the poncho.

### SHELTER HALF

The shelter half (figure 3-9) is made of water-repellent, mildew-resistant cotton and rayon duck. It is issued with five tent pins, a three-section pole, and a guy line. When two shelter halves are joined together, a shelter for two people is formed. It is ventilated by

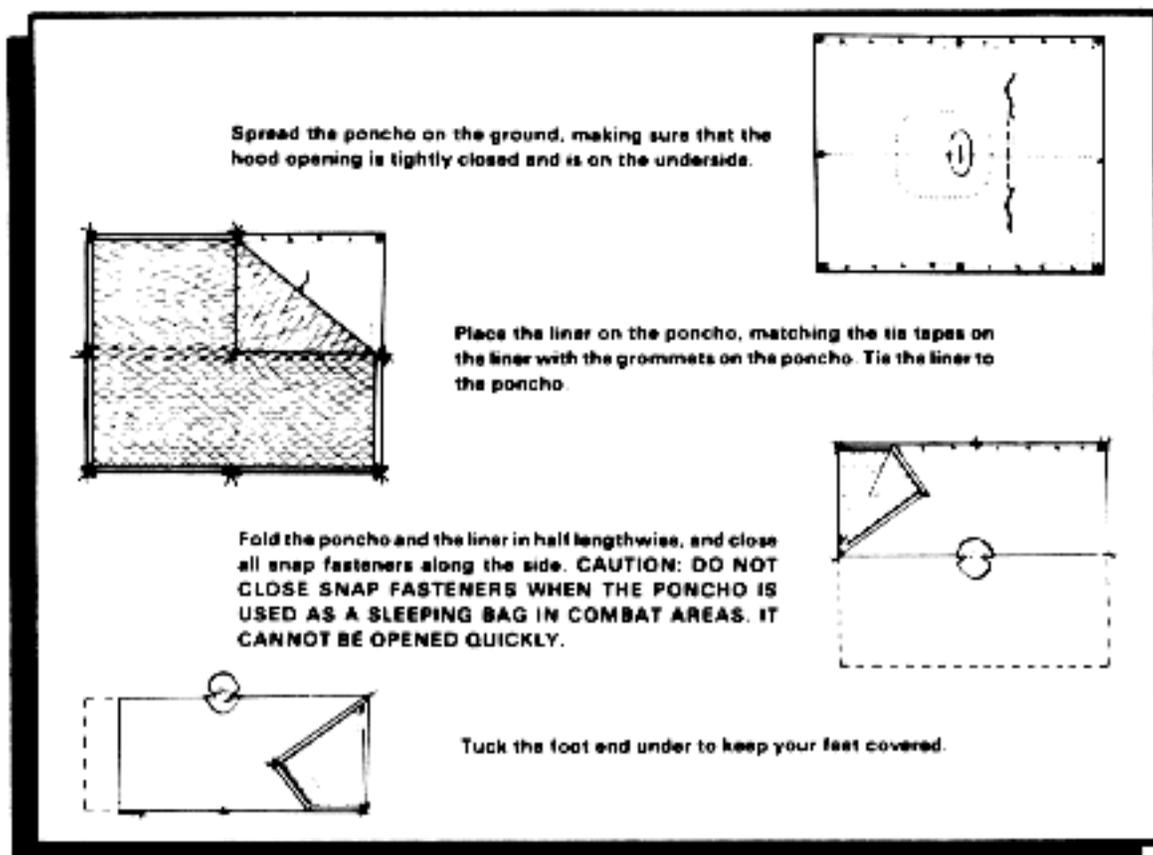


Figure 3-8. Attaching poncho liner to poncho.

opening one or both ends. The shelter may be used by itself as a fly for shade and shelter. To care for the shelter half, follow the instructions given in the canvas and web equipment paragraph of chapter 1.

**Pitching the Two-Person Tent.** Two people can pitch the two-person tent in 5 minutes. Figure 3-10 shows how to do this.

**Striking.** Open enough snap fasteners so that the tent poles can fall to the ground. When the tent poles are down and the tent is flat, remove the pins. Unfasten all remaining snap fasteners, disassemble the poles, and untie the guy lines from the loops at each end of the tent.

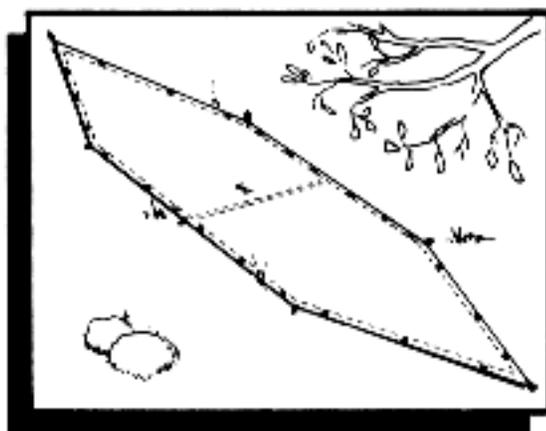
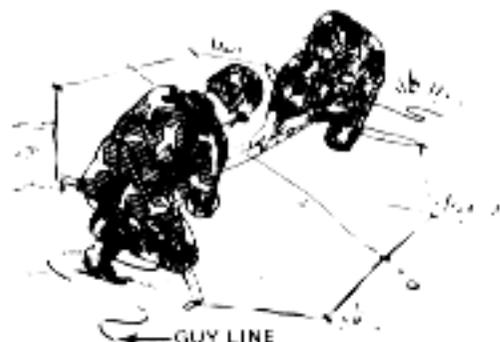
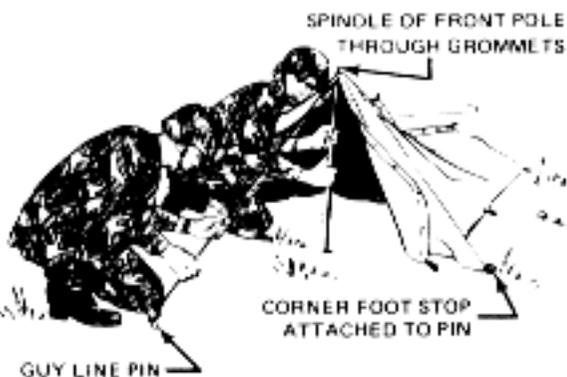


Figure 3-9. Shelter half.

1. SPREAD SHELTER HALVES ON GROUND. SNAP THEM TOGETHER.



2. RAISE FRONT END OF TENT.



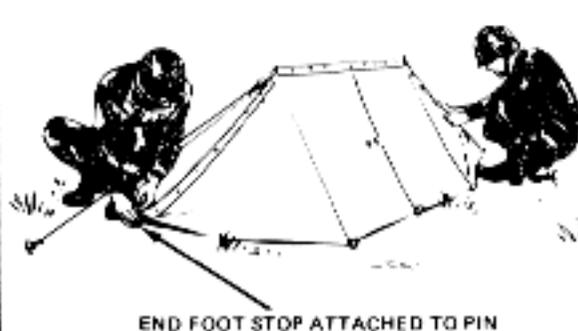
3. RAISE REAR OF TENT.



4. DRIVE SIDE CENTER PINS, AND ATTACH FOOT STOPS.



5. DRIVE END PINS, ATTACH FOOT STOPS, AND CLOSE END SNAPS.



6. INSTEAD OF CLOSING ENDS, THEY MAY BE FOLDED BACK FOR VENTILATION.

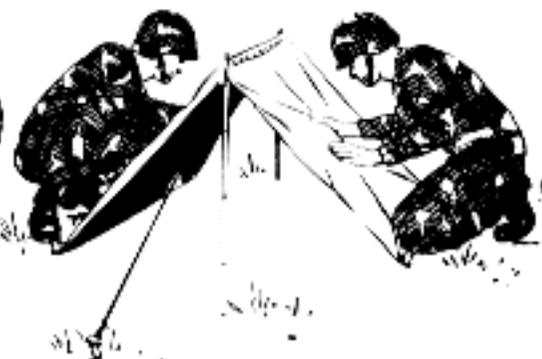


Figure 3-10. Pitching the two-person tent.

**Folding.** To fold the shelter half, see figure 3-11.

**Carrying.** Carry the rolled shelter half under the expandable flap of the field pack, attached to the bottom of the field pack, or inside the field pack or duffel bag.

## INTERMEDIATE COLD WEATHER SLEEPING BAG

This mummy-shaped bag (figure 3-12) is for use in areas where the temperature ranges

from 10° to 40°F. It is made of water-repellent fabric, weighs about 7 1/2 pounds, and comes in one size. The inner and outer channels are filled with two layers of 6-ounce-per-square-yard polyester batting. The full-length, free-running zipper has webbing loops attached to the slider for ease of operation. Snap fasteners are provided in case the zipper fails. Tapes at the foot of the bag are used to tie the bag when it is rolled.

**Care.** To care for the sleeping bag—

- Keep it as dry as possible. It is water repellent, not waterproof.

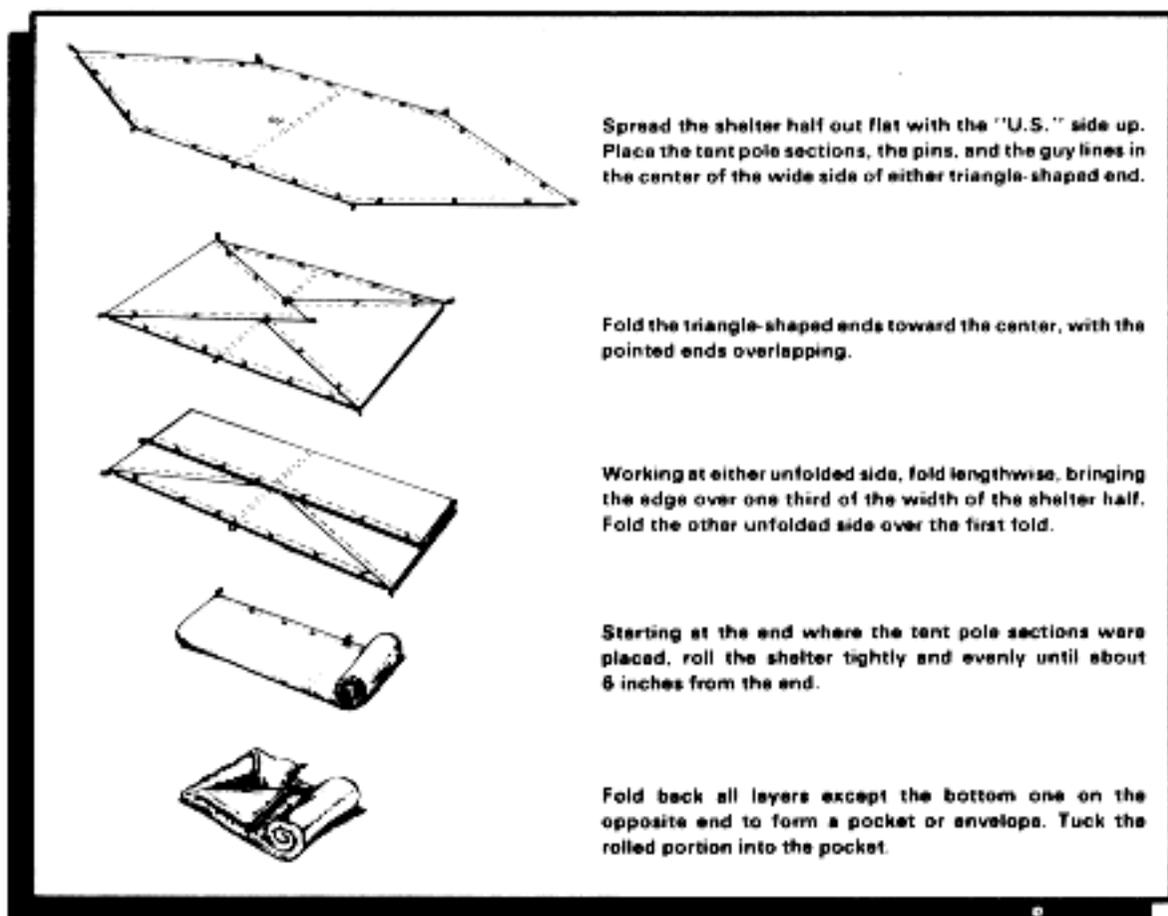


Figure 3-11. Folding the shelter half.

- If you can, air it thoroughly each day. Hang it up by the two webbing loops on the inside of the foot of the bag.
- Fluff the bag before using it.
- Repair all holes and tears as soon as possible, as shown in TM 10-8400-201-23.
- Remove dirt and grease from the bag by spot cleaning with a damp cloth.
- Launder the sleeping bag according to FM 10-280, Formula II, or FM 10-17, Formula G.

**CAUTION:** Because of possible health and fire hazards, do not dry-clean the sleeping bag. Do not smoke in the sleeping bag.

**Use.** When using the sleeping bag, breathe through the face opening to prevent your breath from wetting the bag. If your face is cold, make the face opening smaller by pulling the drawstrings. DO NOT TIE THE STRINGS. When you get up, open the bag wide, and fluff out the moist, warm air. Avoid wearing damp clothing while in the sleeping bag. If you become too warm, ventilate the sleeping bag by partially opening the zipper. To prevent cold air from entering the bottom

of the bag, place the insulated pneumatic mattress, items of clothing, or tree branches under the bag. Protect against ground moisture by placing the poncho under the sleeping bag. Whenever possible and needed, wear clean, dry winter underwear and socks while you are in the bag. For additional warmth, wear the wool shirt and trousers. To open the bag, pull the web loop attached to the zipper down to the foot end of the sleeping bag. FOR EMERGENCY EXIT, GRASP EACH SIDE OF THE OPENING ABOVE THE ZIPPER AND SPREAD APART QUICKLY, FORCING THE ZIPPER DOWNWARD. FOR EMERGENCY EXITS WHEN USING THE SNAP FASTENERS, GRASP EACH SIDE OF THE OPENING ABOVE THE SNAPS AND SPREAD APART QUICKLY ALONG THE FRONT OPENING.

**Packing Procedures.** To pack the sleeping bag—

- Close the zipper; fasten the top, center, and bottom snaps.
- Lay the bag out flat with the zipper side up, and fold lengthwise along the zipper.
- Start at the head end, and roll the bag tightly and evenly to the foot end tie tapes.

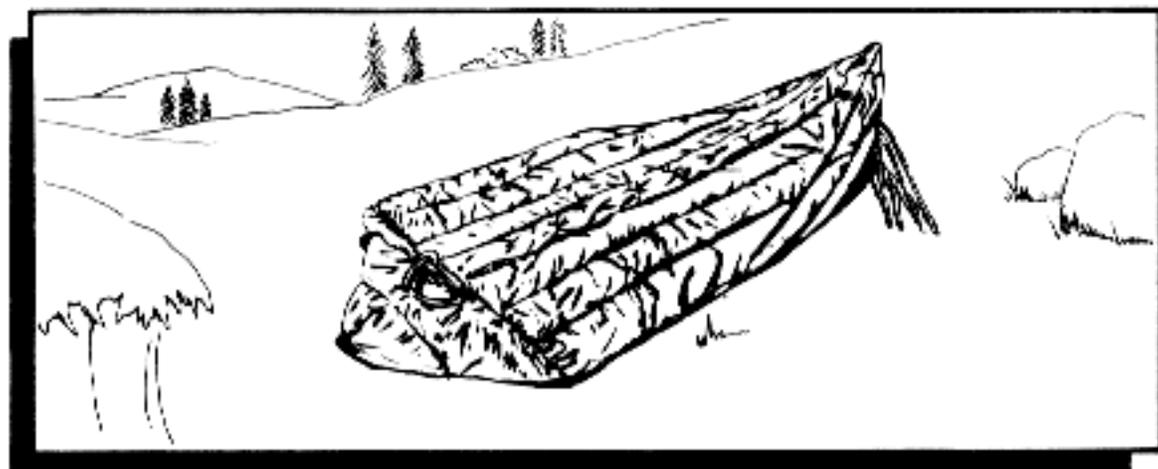


Figure 3-12. Intermediate cold weather sleeping bag.

- Wrap the foot end tie tapes around the rolled bag, tighten the straps, and tie with a bow knot.
- When possible, carry, store, or transport the sleeping bag inside the waterproof clothing bag.

### EXTREME COLD WEATHER SLEEPING BAG

This sleeping bag is identical to the intermediate cold weather sleeping bag except it weighs about 2 pounds more. It contains down and polyester batting for insulation. It, too, comes in one size. It is for use in areas where temperatures are below 10°F. Care for and use this sleeping bag in the same way as the intermediate cold sleeping bag, with one difference—always use the insulated pneumatic mattress or foam sleeping mat under this bag.

### INSULATED PNEUMATIC MATTRESS

The insulated pneumatic mattress (figure 3-13) is made of rubber-coated nylon cloth and is shaped to conform to the sleeping

bag. The mattress weighs about 3 1/2 pounds and has batting inside each channel for insulation.

**Care.** To care for the mattress—

- Air-dry a wet mattress before using it.
- Check for small holes by dipping the inflated mattress in water and looking for air bubbles.
- Repair small holes and tears by using the cold-weather, insulated-boot/pneumatic mattress maintenance kit. Refer to TM 10-8400-201-23 for instructions.

**Use.** Always use the mattress (with the inflating tube up) under sleeping equipment to add warmth and comfort and to keep the equipment dry. When using the mattress—

- Inflate it by blowing air into it. **DO NOT USE AIR LINES OR OTHER MECHANICAL MEANS TO INFLATE IT.**
- Do not overinflate, as this decreases sleeping comfort. Test the mattress for proper inflation by sitting on it. When you are sitting on the mattress, your buttocks should barely touch the ground.
- Do not bring a mattress that has been

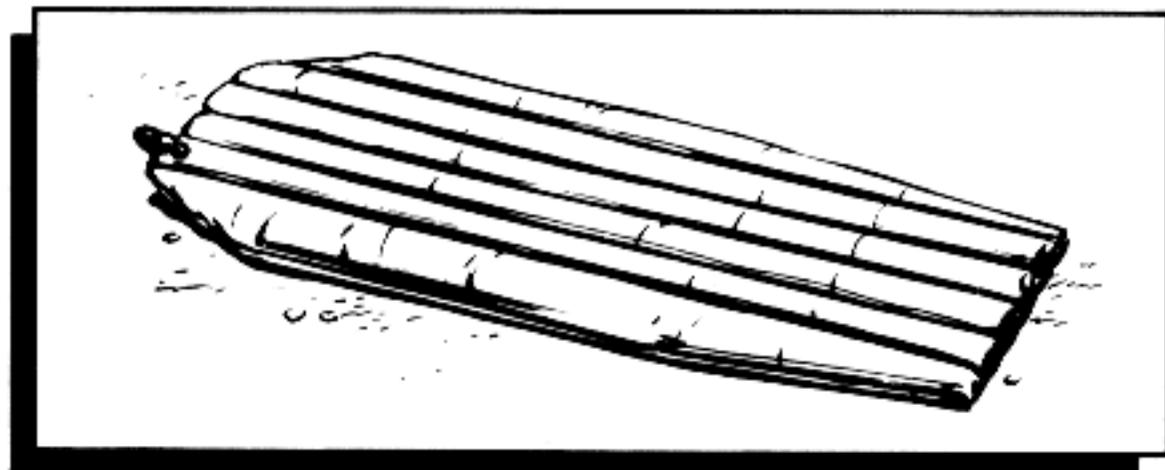


Figure 3-13. Insulated pneumatic mattress.

inflated outdoors into a heated shelter without first letting out the air. The temperature changes will cause the inner air to expand, and the mattress will tear or burst.

**Folding and Packing Procedure.** To fold the mattress for packing—

- Remove the stopper, fold the mattress lengthwise, and roll the mattress toward the open valve to release all the air.
- Replace the stopper.
- Unroll the mattress.
- Fold the mattress over twice, and place it in the waterproof clothing bag.

### FOAM SLEEPING MAT

The foam sleeping mat (figure 3-14) is used in place of the insulated pneumatic mattress. It is made of closed cell foam and weighs about 1 1/4 pounds. It will not absorb water and stays flexible to temperatures of -100°F.

**Care.** Clean the mat by brushing with a soft brush or sponging with soap and water.

**Rolling Method.** Lay the mat out with the tie tapes on the underside of the end farthest from you. Roll the mat as tightly as possible, wrap the tie tapes around the mat, and tie with a bow knot.

**Carrying Methods.** The rolled mat should be placed directly on top (figure 3-15) or directly beneath (figure 3-16) the three large cargo pockets on the field pack. Place the flap tiedown straps over the mat, and pull them tight to hold the mat in position. If the mat is on top of the pockets, the pouch flap should be over the rolled mat as far as possible.

### SLEEPING HOOD

The sleeping hood (figure 3-17) has chin flaps with a hook-and-pile fastener. Wear it when you are in the sleeping bag. Its purpose is to protect the head area of the sleeping bag

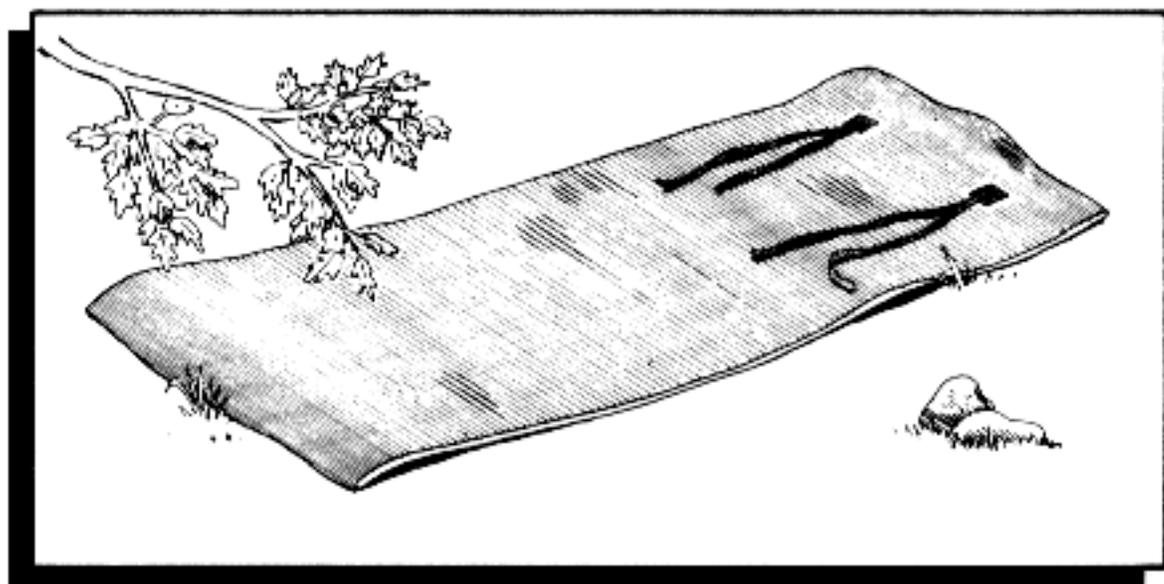
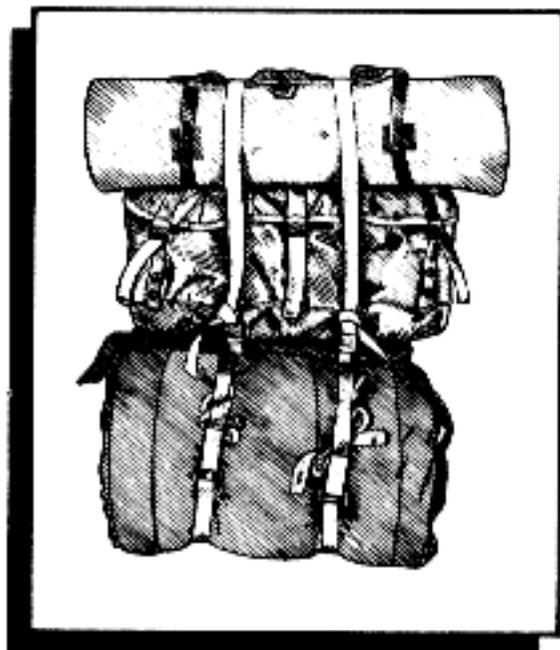
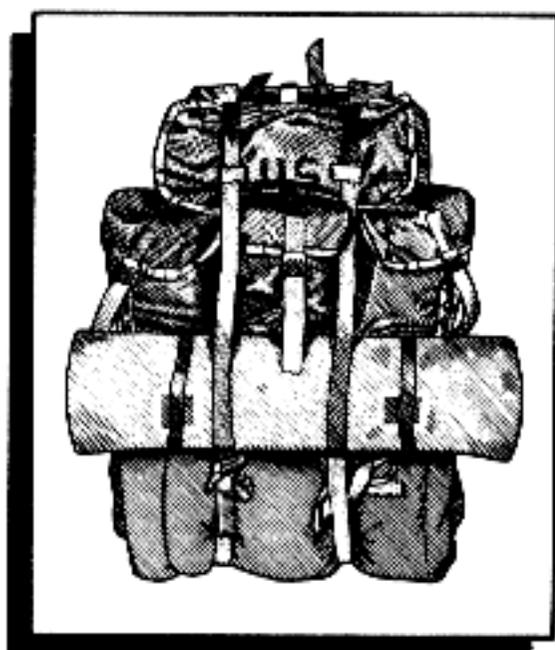


Figure 3-14. Foam sleeping mat.



*Figure 3-15. Rolled sleeping mat on top of field pack.*



*Figure 3-16. Rolled sleeping mat beneath field pack.*

from perspiration, dirt, and head or hair oils. Wash the hood by first closing the fastener and then hand squeezing it in lukewarm water and mild detergent. Rinse it in lukewarm water and squeeze out the excess water. **DO NOT WRING IT. AIR-DRY IT.**

### **BLANKET**

Fold the blanket so that it can be carried inside the field pack under the expandable flap or outside, attached to the bottom of the pack with the two adjustable securing straps. You may also fold it and carry it in your duffel bag. Wash the blanket frequently with lukewarm water and mild soap. **DO NOT USE HOT OR BOILING WATER.** Stretch the blanket back into shape while it is drying. The blanket can be used with the poncho as a sleeping bag in mild climates.



*Figure 3-17. Sleeping hood.*

## CHAPTER 4

## Load-Carrying Equipment



### FIGHTING AND EXISTENCE LOAD CONCEPT

The main purpose of the fighting and existence load concept is to lighten your load. You should only carry the items necessary for your mission. The load you carry should not include any item that can be carried another way. Because the type of mission, terrain, and environment will affect your clothing and equipment requirements, your unit commander may decide what items will be in your fighting or existence load.

#### FIGHTING LOAD

The typical fighting load (figure 4-1) is made up of essential items of individual clothing, equipment, weapons, and ammunition that are carried by you to complete the immediate mission of your unit.

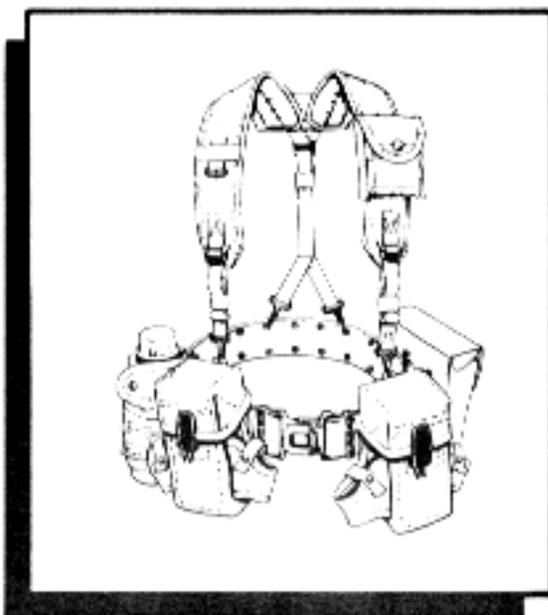


Figure 4-1. A typical fighting load.

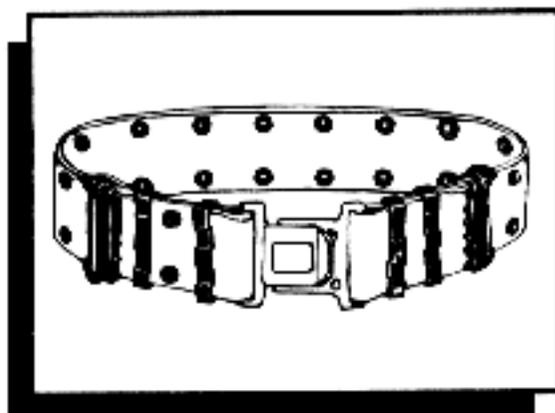


Figure 4-2. Individual equipment belt.

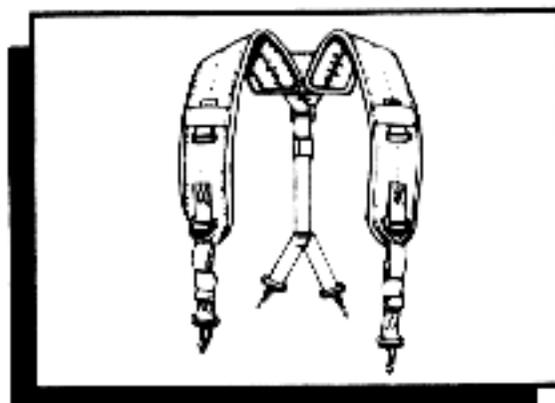


Figure 4-3. Individual equipment belt suspenders.

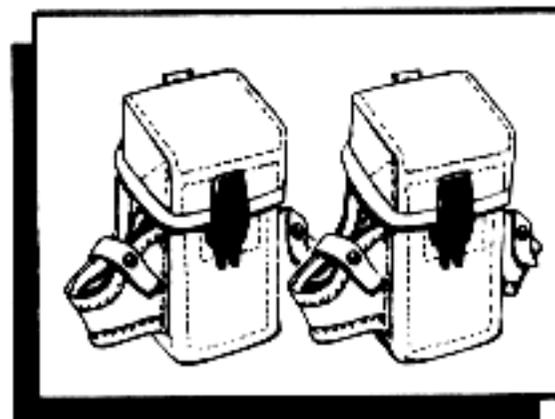


Figure 4-4. Small-arms ammunition case.

**Individual Equipment Belt.** Carry the ammunition cases, intrenching tool carrier, and the canteen cover on the individual equipment belt (figure 4-2). The belt comes in two sizes—medium for persons whose bare waist measures 30 inches or less; large for persons whose bare waist measures more than 30 inches.

**Individual Equipment Belt Suspenders.** The suspenders (figure 4-3) support the individual equipment belt when the appropriate components are attached to the belt. Web band metal loops are provided on each suspender strap for attachment of small items such as the first aid/compass case or a flashlight.

**Small-Arms Ammunition Case.** The small-arms ammunition case (figure 4-4) holds three 30-round magazines (M16 rifle). The case has fragmentation grenade pockets on each side and a plastic fastener that can be opened and closed with one hand.

**Intrenching Tool Carrier.** This carrier (figure 4-5) holds the lightweight, collapsible intrenching tool.

**Canteen Cover.** The canteen cover (figure 4-6) holds the plastic canteen and metal cup. The cover has a small pocket attached for water purification tablets.

**First Aid Dressing/Compass Case.** This

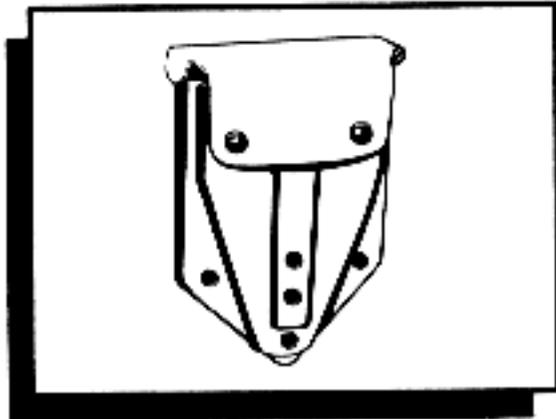


Figure 4-5. Intrenching tool carrier.

case (figure 4-7) holds either a first aid dressing or an unmounted magnetic compass.

### PROCEDURES FOR ASSEMBLING FIGHTING LOAD COMPONENTS

The procedure for assembling the fighting load components of the all-purpose lightweight individual carrying equipment (ALICE) follows. (A different procedure must be followed by parachutists when preparing for a jump. This procedure is described in TM 57 220.)

**Fitting and Adjusting the Belt.** Try on the individual equipment belt, and determine the length needed for a snug—but not tight—fit. Then if you need to adjust the belt—

- Slide the two metal keepers away from the belt and the adjusting clamp. Unlock the adjusting clamp by spreading apart the looped webbing (figure 4-8).
- Slide the adjusting clamp toward the belt buckle to loosen the belt and away from the buckle to tighten it. Squeeze the adjusting clamp to lock the belt in place; then slide the metal keepers so that one is next to the adjusting clamp and the other is next to the belt buckle. Each adjusting clamp should be about the same distance from the belt buckle (figure 4-9).

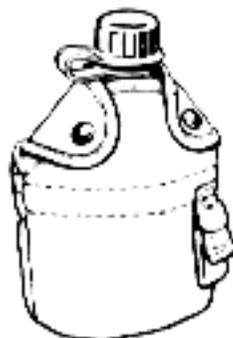


Figure 4-6. Canteen cover.



Figure 4-7. First aid dressing/compass case.



Figure 4-8. Adjusting individual equipment belt.

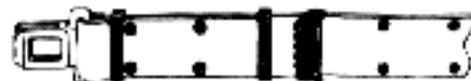


Figure 4-9. Loosening and tightening individual equipment belt.

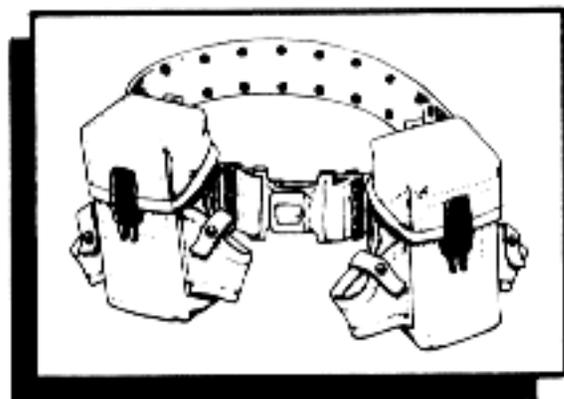


Figure 4-10. Ammunition cases on individual equipment belt.

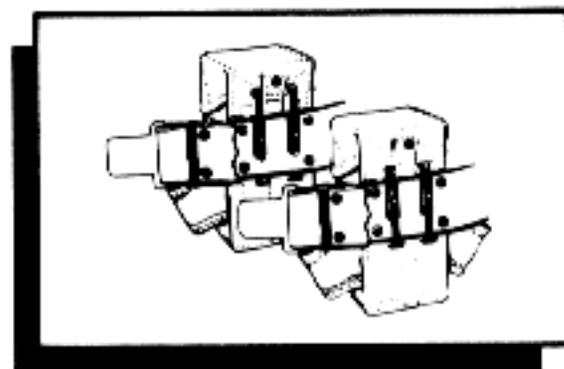


Figure 4-11. Slide keepers on ammunition cases.

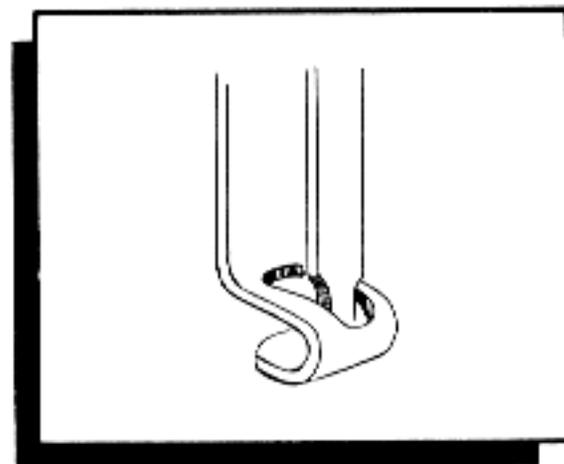


Figure 4-12. Locking the slide keeper.

**Attaching the Ammunition Cases to the Individual Equipment Belt.** Attach one ammunition case to the left side of the belt next to the belt buckle and the other ammunition case to the right side of the belt next to the buckle (figure 4-10). To do this—

- Pull each slide keeper (figure 4-11) attached to the case to an open position, and slide it over one thickness of the webbing. Make sure the slide keepers are vertical and the bottom holes are out beyond the webbing.
- Push each slide keeper down and into the holes to lock it (figure 4-12).

When attaching 20-round ammunition cases, attach the front suspender snap hooks to the top eyelet nearest the buckle on each end of the belt. Fasten the snap hooks on the end of each ammunition case supporting strap to the metal loop on the front of each shoulder strap (figure 4-13).

**Attaching the Suspenders to the Individual Equipment Belt and Ammunition Cases.** To attach the suspenders to the belt and ammunition cases—

- Open all suspender snap hooks by pushing the hooks up and out of the retainers (figure 4-14).

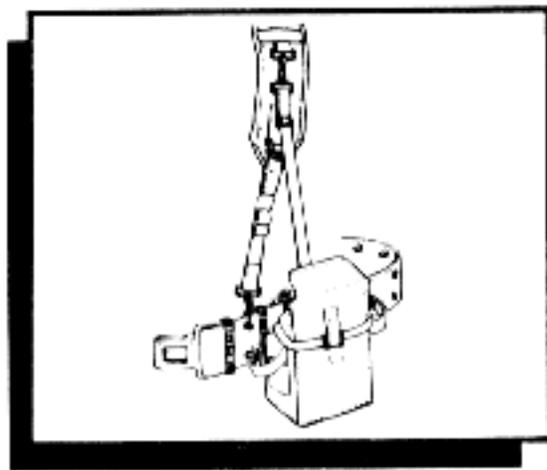


Figure 4-13. Twenty-round ammunition cases on individual equipment belt.

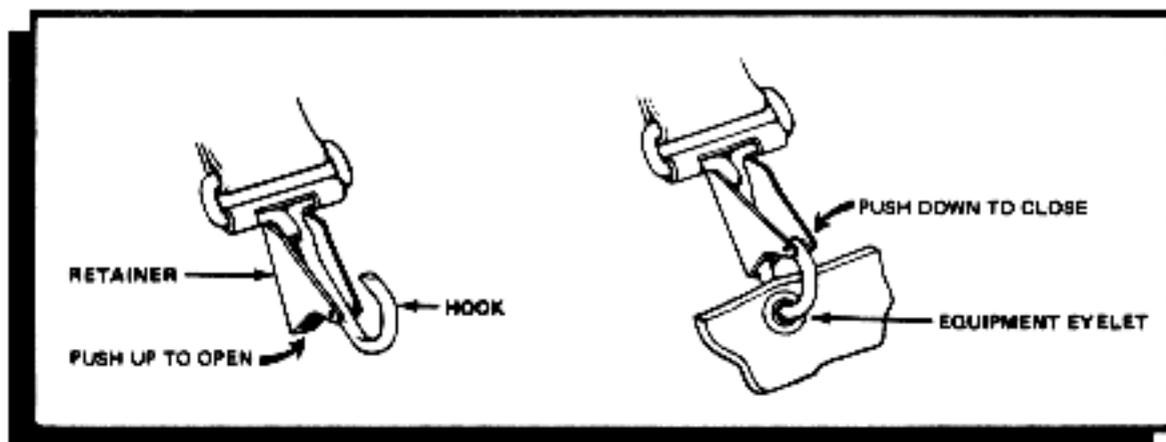


Figure 4-14. Snap hooks.

- Attach the back suspender snap hooks into the eyelet at each side of the two center top eyelets at the back of the equipment belt. Close the snap hooks.
- Attach the front suspender snap hooks to the eyelets on the back of the ammunition cases. Close the snap hooks (figure 4-15).
- When the ammunition cases are not used, attach the front suspender snap hooks to the top eyelet on the side of each belt buckle, and close the snap hooks.

**Attaching the Intrenching Tool Carrier.** Using the two slide keepers on the back of the carrier, attach the carrier to the belt on the left side as close as possible to the ammunition case (figure 4-16). Place the intrenching tool in the carrier so that the blade portion is to the back of the carrier.

**Attaching the Canteen Cover.** Using the two slide keepers on the back of the canteen cover, attach the cover on the right side as close as possible to the ammunition case (figure 4-16).

**Attaching the First Aid Dressing/Compass Case.** Using the slide keeper on the back of the case, attach the case to the webbing loop on the front of either shoulder

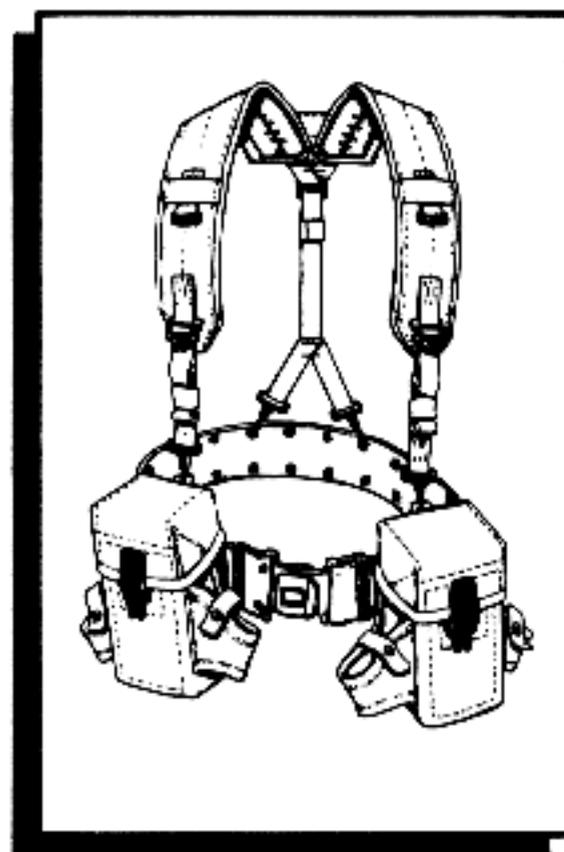


Figure 4-15. Attaching suspenders to belt and ammunition cases.

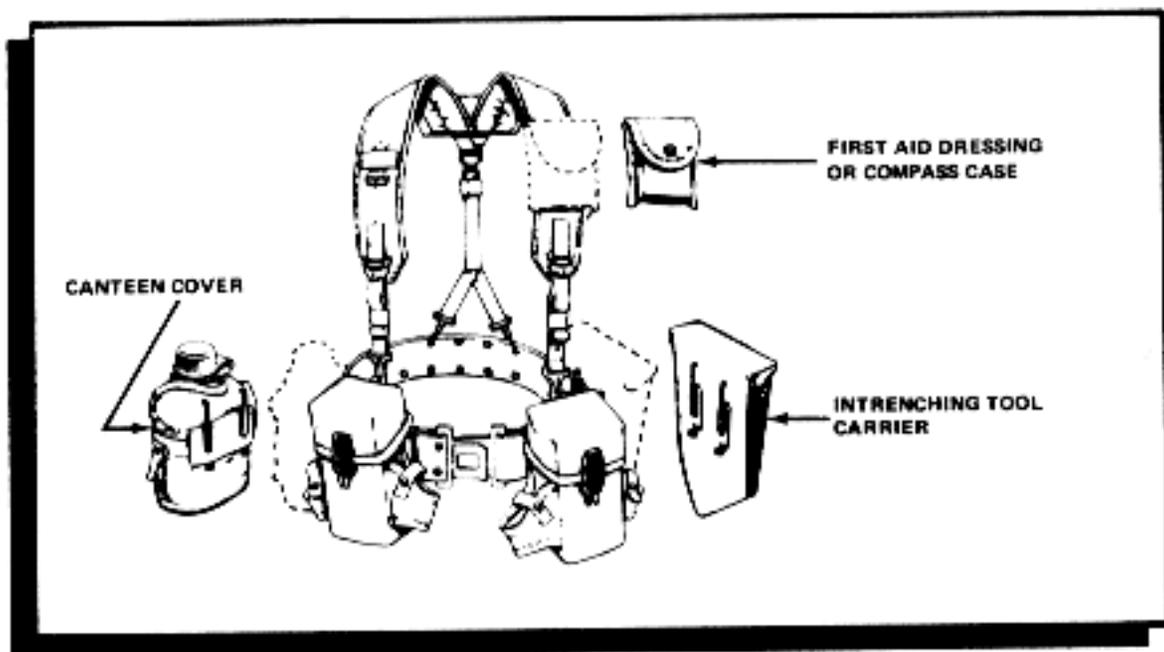


Figure 4-16. Attaching intrenching tool carrier, canteen cover, and first aid dressing/compass case to belt.

strap. It can also be attached to the right side of the belt, next to the ammunition case (figure 4-16). The case should be attached in an upright position to prevent loss of the contents.

**Adjusting the Front and Back Suspender Straps.** After you have attached the equipment to the belt and suspenders, put it on and fasten the buckle. Adjust the length of the front and back suspender straps using the loose ends of the straps (figure 4-17). Pull down on the loose end of each strap to raise the belt. Lift the end of each strap to lower the belt. Secure the loose ends of the straps with the elastic loops. When you are finished, the belt should hang evenly at your waist, and the yoke should be positioned comfortably. Although you can adjust the back strap yourself, you can do it easier by using the buddy system.

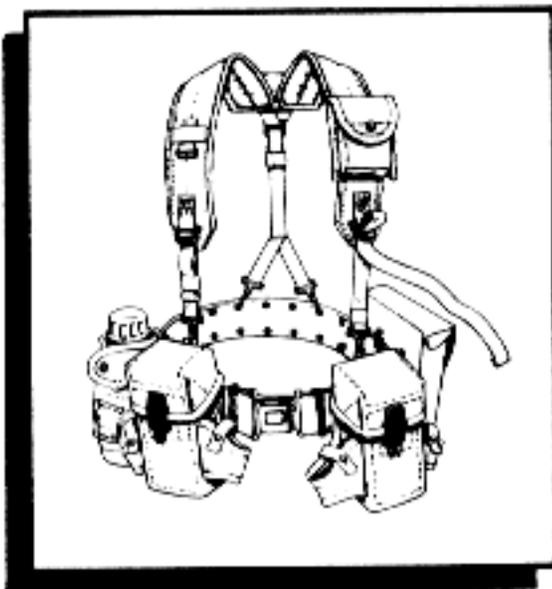


Figure 4-17. Adjusting the front and back suspender straps.

## EXISTENCE LOAD

The typical existence load (figure 4-18) consists of the fighting load plus those items which are required to sustain or protect you or which may be necessary for your increased personal and environmental protection. Unless other transportation is available, both the fighting and existence loads are carried by you, the soldier.

**Ground Troops Pack Frame.** Use the ground troops pack frame as a mount for the medium or large combat field pack.

**Pack Frame Straps.** Straps attached to the pack frame are a lower back strap, waist straps, and two shoulder straps. There is a quick-release device on each shoulder strap.

**Cargo Support Shelf.** Use the cargo support shelf to support bulky loads such as water, gasoline, and ammunition cans; field rations; and radio.

**Cargo Tiedown Straps.** Use the two cargo tiedown straps to secure equipment to the pack frame.

**Medium Combat Field Pack.** Use the medium combat field pack (figure 4-19) to carry existence loads including clothing, rations, and personal items. The pack has a pouch with a drawcord closure and three outside smaller pockets. These pockets are tunneled to the pouch so that long objects can be carried between the pouch and each pocket. The pouch also has a special inside pocket to carry the AN/PRC 25 or 77 radio if necessary. The pouch flap has a pocket that can be opened by pulling two tabs apart. Small flat items can be carried in this pocket. Hangers are also provided to carry individual equipment or extra ammunition. This pack can be carried directly on your back or on the pack frame. In extremely cold climates, you must carry the pack on the frame.

**Large Combat Field Pack.** Use the large combat field pack (figure 4-20) to carry excessively large loads—usually during special missions or in arctic regions. It is much



Figure 4-18. Existence load components.



Figure 4-19. Medium combat field pack.



Figure 4-20. Large combat field pack.



Figure 4-21. Back strap.

the same as the medium combat field pack, except that it is larger, and there are three more small pockets at the top of the pouch. Of the three lower outside pockets, the two outer ones are tunneled to the pouch so that long objects can be carried between the pouch and each pocket. There are tiedown cords and D-rings inside the pouch to shorten this pack if it is not filled.

**Field Pack Camouflage Cover.** Use the white camouflage field pack cover over the field pack when operating in snow-covered terrain or the desert camouflage field pack cover when in a desert environment.

### PROCEDURES FOR ASSEMBLING EXISTENCE LOAD COMPONENTS

Procedures for assembling the existence load components follow. Refer to TM 57-220 for parachutist procedures.

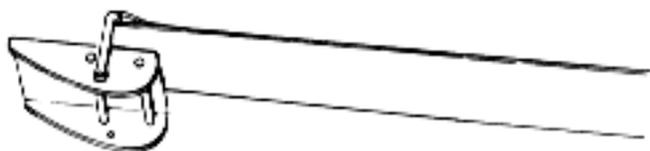
**Attaching and Adjusting the Lower Back Strap to Pack Frame.** The lower back strap (figure 4-21) keeps the load away from your back and lets air circulate between your back and the load. The strap should be loose enough to curve in and fit against the lower part of your back. To attach the lower back strap—

- With the padded surface outward, insert each end of the strap through the metal loops on the bottom of the pack frame.
- Attach the quick-release strap to the back strap by threading the quick-release strap through the smaller metal loops on the back strap. To adjust the quick-release strap, refer to figure 4-22.

**Attaching Shoulder Straps to Pack Frame.** Both shoulder straps have quick-release assemblies on them. To attach the straps (figure 4-23)—

- Insert the looped end, from the inside of the frame, through the plastic grommet to the outside of the frame. Pass the other end of

**HOLD BUCKLE AS SHOWN**



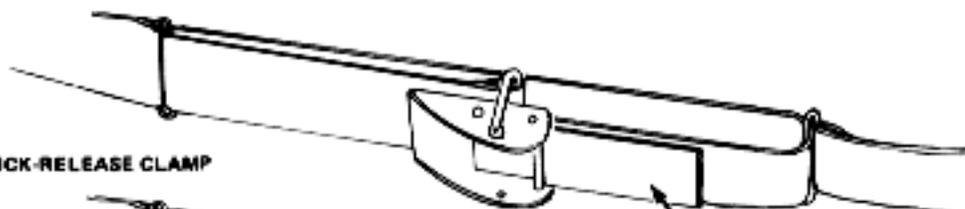
**FEED STRAP UNDER BOTH BARS**



**FEED OVER FIRST BAR, UNDER SECOND BAR**



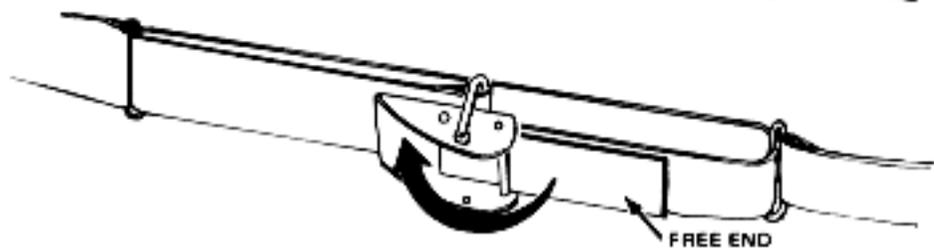
**ADJUST TO SIZE BY PULLING FREE END OF STRAP**



**CLOSE QUICK-RELEASE CLAMP**



**TO REMOVE, PULL UP FREE END OF STRAP**



*Figure 4-22. Adjusting quick-release strap.*

the shoulder strap through the loop, and pull tight (A).

- Insert the webbed strap on the shoulder pad through the metal keeper on the top of the pack frame (B). Make sure the padded side faces inward.
- Thread the webbing through the nonslip buckle and tighten.

**Attaching Waist Straps to Pack Frame.** The waist straps are threaded through the buckles on the outside of the lower back strap (C). The strap with the male buckle goes on the left side. The strap with the female buckle goes on the right side.

**Adjusting Shoulder and Waist Straps.** Adjust the shoulder and waist straps (figure 4-24) after you have put on the frame with the load you are going to carry. Each set of straps has adjustment buckles.

**Shoulder straps.** To lift the load on your back, shorten the strap by pulling down on the loose end of the webbing (A). To lower the load, lengthen the strap by pulling up on the cord.

**Waist strap.** To tighten the waist strap, pull the loose end of the strap on either side forward (B). To loosen the waist strap, pull the web strap on either buckle to the rear.

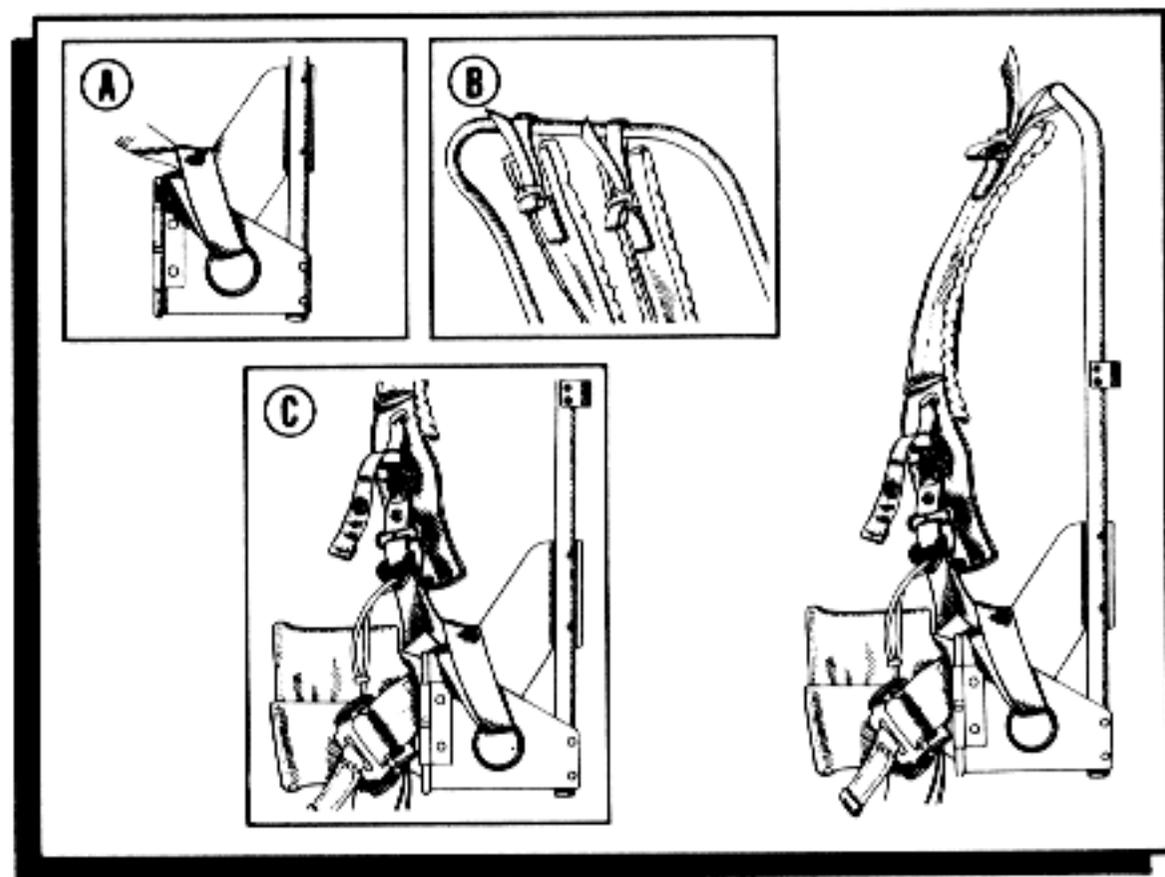


Figure 4-23. Attaching straps to pack frame.

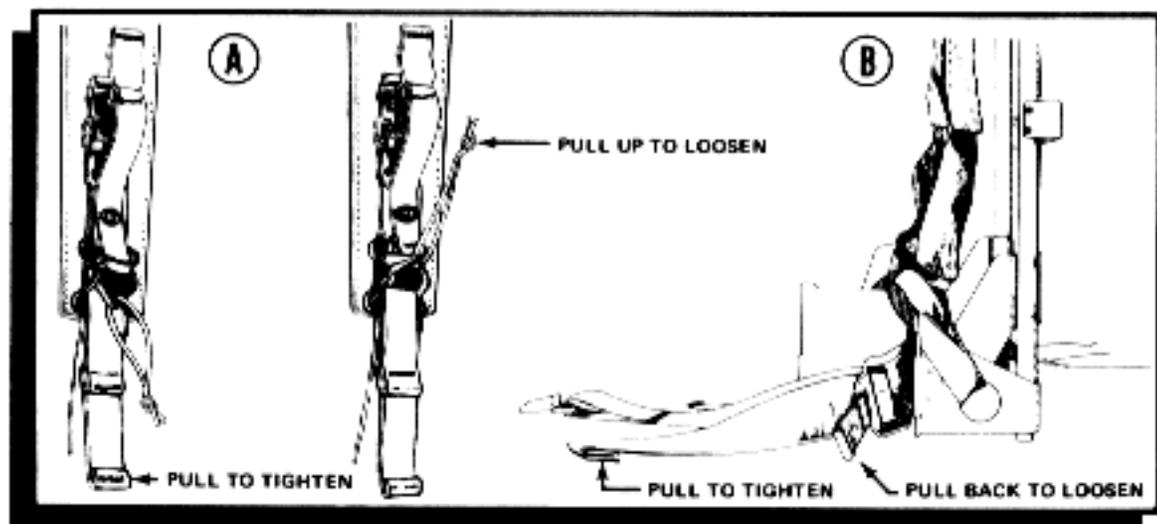


Figure 4-24. Adjusting shoulder and waist strap.

**Attaching Medium Combat Field Pack to Pack Frame.** To attach the medium pack to the pack frame (figure 4-25)—

- Insert the bare frame into the envelope on the back of the pack.
- Loop the strap located on the bottom of the pack around the frame twice.
- Buckle the end of the strap to the nonslip buckle.
- Attach and adjust the shoulder straps and waist straps as previously described.

**Attaching Shoulder Straps to Medium Combat Field Pack.** The medium pack may be carried using the shoulder straps without the pack frame. To attach the shoulder straps to the pack (figure 4-26), insert the looped end through the D-ring on the bottom of the pack, pass the other end of the shoulder strap through the loop, and pull tight. Next, insert the webbing of the loose end of the shoulder strap through the metal loop at the top of the pack, making sure the padded side of the shoulder strap is facing inward. Then thread the webbing through the nonslip



Figure 4-25. Medium combat field pack attached to pack frame.

buckle and tighten. Adjust the shoulder strap as previously described.

**WARNING:** When you carry the medium combat field pack in extreme cold climates, you must wear it on the pack frame. Using the pack frame will prevent accumulation of sweat in the area where the pack contacts your back; this moisture can cause you to cool rapidly.

**Attaching Large Combat Field Pack to Pack Frame.** Use the same procedures to attach the large combat field pack to the pack frame as those used to attach the medium combat field pack.

**Attaching Cargo Shelf to Pack Frame.** Attach the cargo shelf to the pack

frame by hooking it into the middle or bottom brace of the frame as shown in figure 4-27.

**Attaching Cargo to Pack Frame.** Use the cargo tiedown straps to secure a load (such as a 5-gallon can, ammunition case, field ration case, or radio) to the pack frame (figure 4-28). First, wrap the tiedown strap around the load and the frame. Next, place the flat hook end of the tiedown strap into the slot at the buckle, and pull the loose end to tighten, leaving a little slack in the strap. Then push the fastener into the closed position. This takes up the slack and tightens the strap around the cargo. Leave enough slack in the strap so that when you close the fastener, the strap will not crush the cargo. To open the fastener, pull up on the end of the strap.

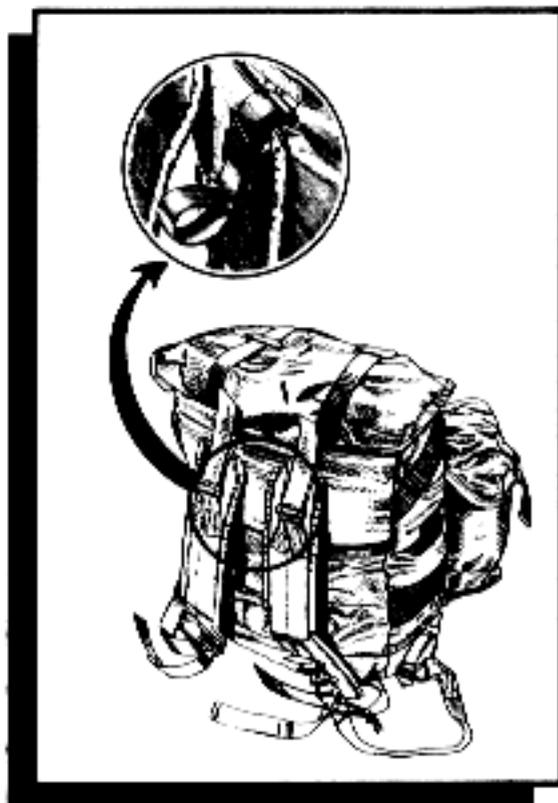


Figure 4-26. Attaching shoulder straps to medium combat field pack.

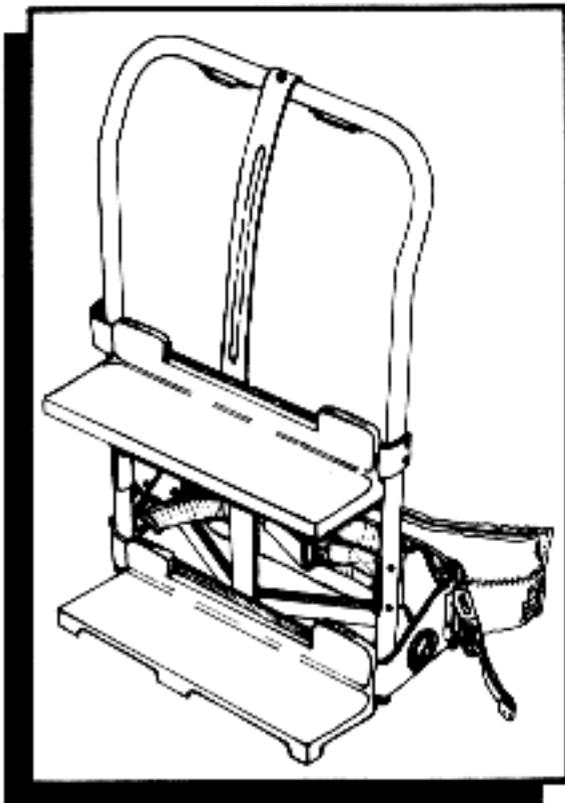


Figure 4-27. Cargo shelf attached to pack frame.

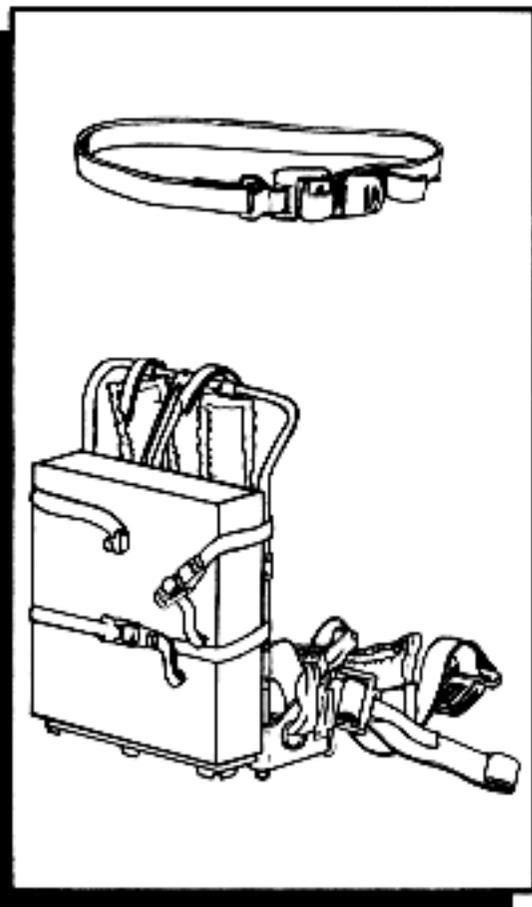


Figure 4-28. Attaching cargo to pack frame.

**Attaching Sleeping Bag.** When using the large combat field pack, always carry your sleeping bag inside the pack. When using the medium combat field pack, carry the sleeping bag inside or outside the pack. To attach the bag to the outside of the pack (figure 4-29)—

- Using the cargo tiedown straps, pass the hook ends of the straps through the webbing loops on the bottom of the pack.
- Wrap the straps around the sleeping bag, and attach the ends of the straps as shown.
- Push the fasteners into the closed position, and tighten the straps.

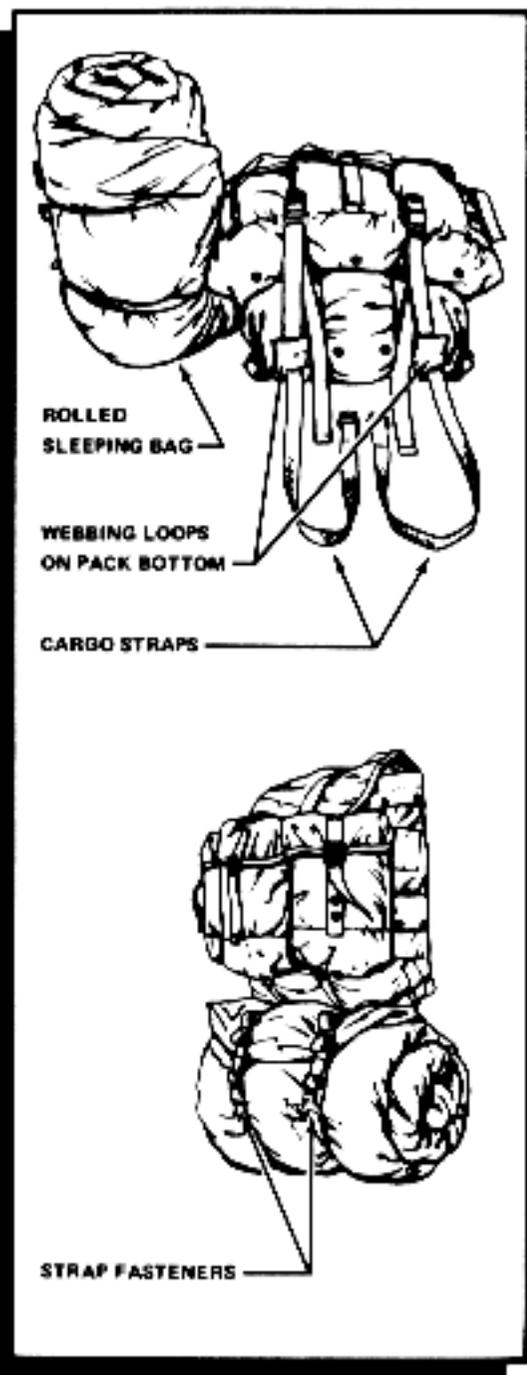


Figure 4-29. Attaching sleeping bag.

- When using the pack frame with the pack (figure 4-30), pass the cargo tiedown straps under and around the horizontal bar of the frame after completing step one. Continue as described in steps two and three.

## COMBAT FIELD PACK CLOSURES

Close the pockets on either of the combat field packs (figure 4-31) by following these instructions:

**Inside (Radio) Pocket.** Thread the webbing through the nonslip buckle. Pull the

loose end to tighten and close the pocket (A).

**Three Outside Pockets (B).** Make sure the two snap fasteners at one end of the webbing are fastened, then pull the webbing to tighten and close the pocket. You can open the pocket easily by pulling the tab to unsnap the snap fasteners. You can close the pocket again by snapping the snap fasteners (C).

**Pouch.** Pull the two drawstring cord clamp ends outward. This will gather the top into a tight closure (D). To loosen the drawstring, push the button on the drawstring buckle down, and at the same time, pull the clamp down (E).

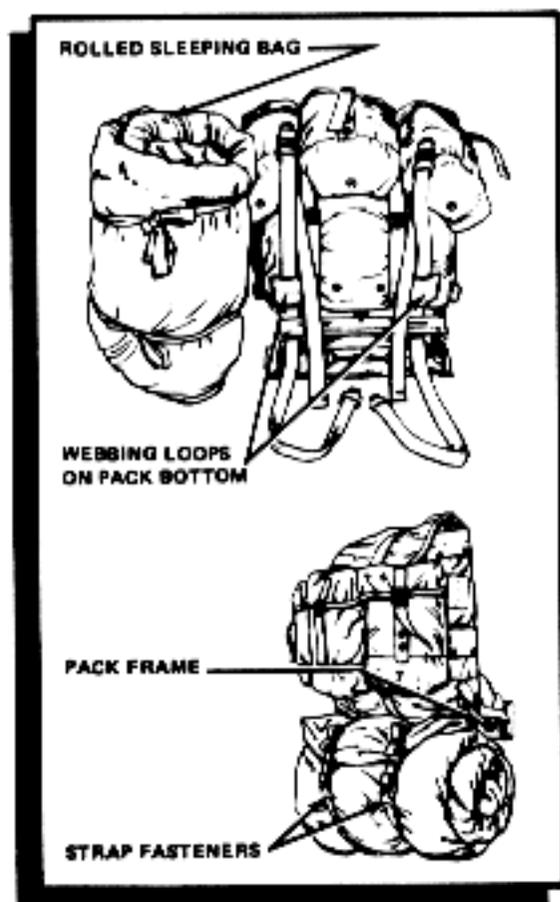


Figure 4-30. Attaching sleeping bag when using pack frame.

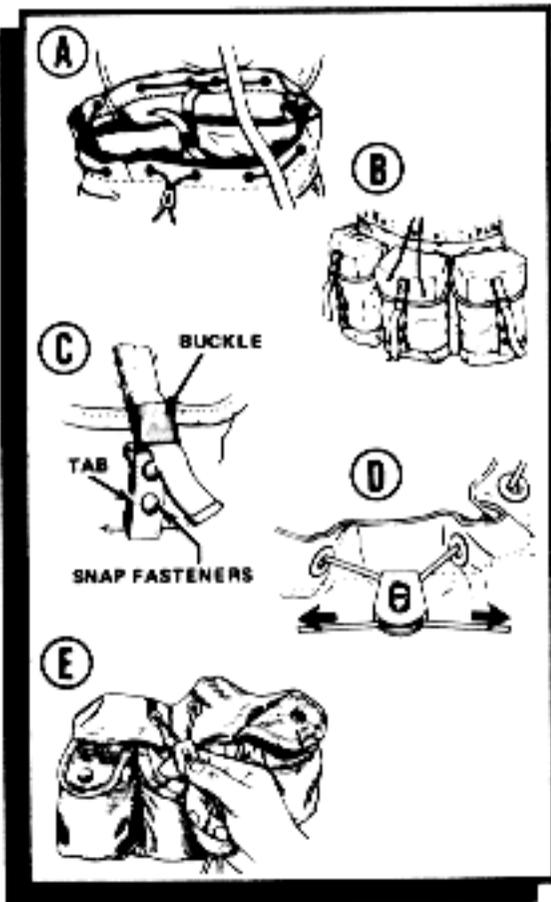


Figure 4-31. Combat field pack closures.

**Pouch Flap.** Insert the pouch flap tiedown strap (figure 4-32) through the web loop on top of the pouch flap, down over the pouch flap, and into the bottom nonslip buckle. Pull tight.

### QUICK-RELEASE DEVICE

Your backpack, with or without the pack frame, can be removed quickly by using the quick-release devices on the shoulder straps. The quick-release device (figure 4-33) consists of two metal loops, a retainer clip (plastic prongs), and a pull tab.

**Assembly.** To assemble the quick-release device, place the large metal loop over the small metal loop. Insert the retainer clip (prongs) through the smaller metal loop, and fasten the snap fastener on the pull tab.

**Release.** To remove the load quickly, pull up firmly on the tab.

### UNIVERSAL LOAD-CARRYING SLING

The universal load-carrying sling (figure 4-34) is an addition to the individual load-carrying systems when special loads are to be carried. The adjustable sling is 1 3/4 inches wide and about 6 1/2 feet long. It has lightweight hardware components, such as buckles, slide loops, and V-rings, which can be shifted to the position required to attach the various loads. Use the sling to carry general utility loads, ammunition, and infantry crew-served weapons. You can use one sling by itself, or use two or more at a time, depending on the load to be carried. Slings can be used with or without load-carrying equipment. **DO NOT CARRY LOADS OF OVER 35 POUNDS WITH EACH SLING.** Instructions for assembling typical loads follow.

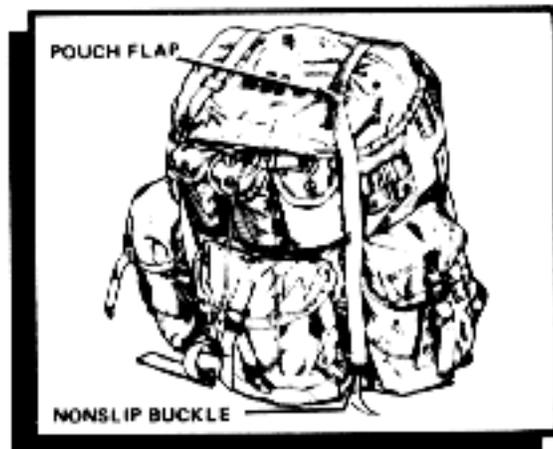


Figure 4-32. Pouch flap.

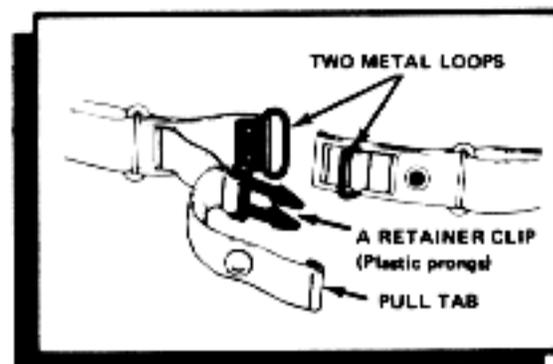


Figure 4-33. Quick-release device.

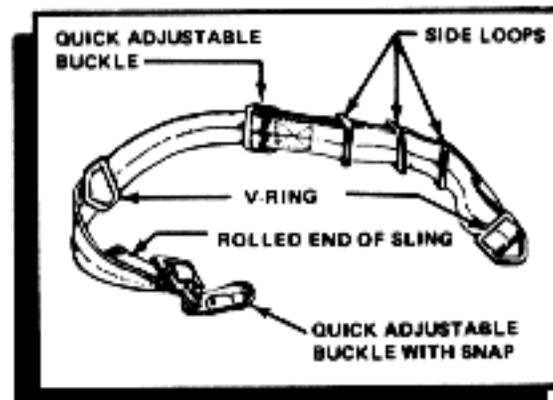


Figure 4-34. Universal load-carrying sling.

**Fiber Ammunitions Containers.** A method for carrying fiber ammunitions containers is illustrated in figure 4-35.

**Ammunition Boxes.** Figure 4-36 shows a method for carrying two boxes of ammunition. For this load, adjust the loop end to secure one box; use the adjustable buckle with snap fastener and the V-ring to secure the other box.

**Five-Gallon Water Can.** Figure 4-37 shows a method for carrying a 5-gallon water can using two slings. To reduce leakage, the can is carried with the spout up.

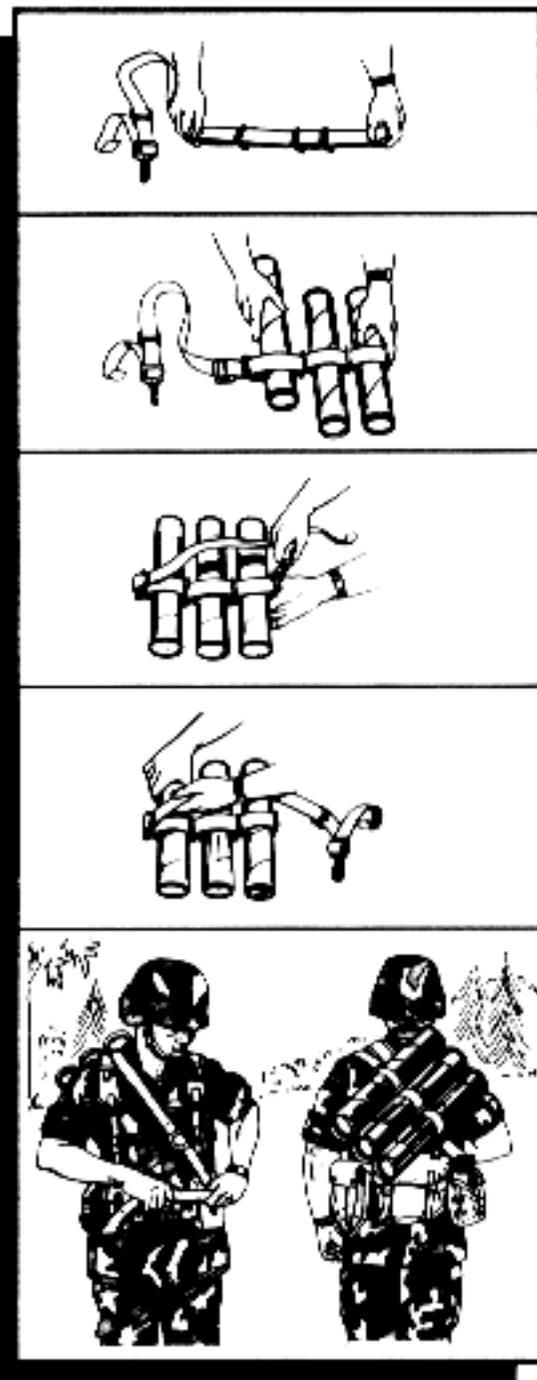


Figure 4-35. Assembling fiber ammunitions containers in sling.



Figure 4-36. Ammunition boxes.

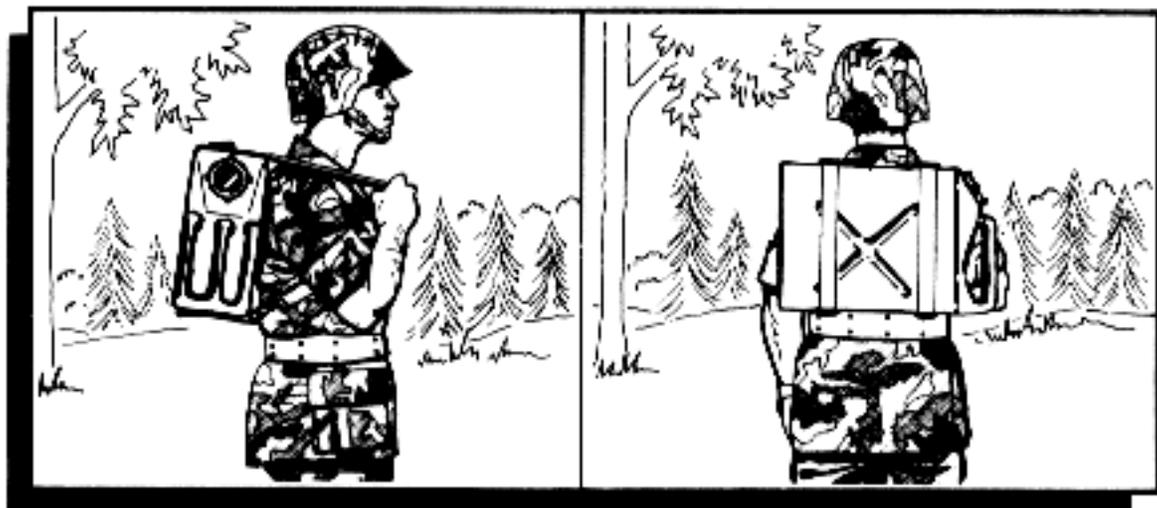


Figure 4-37. Five-gallon water can.

**Litter.** Figure 4-38 shows a method for carrying a litter using four slings. This method frees your hands for other uses.

### PACKBOARD

The plywood packboard (figure 4-39) is an efficient means to carry loads of considerable weight or of irregular shape. Fifty pounds

can be easily carried, and when necessary, more than 100 pounds can be carried. The packboard consists of a rugged frame of molded plywood bent at each side, a canvas backrest fastened to the frame by lacing cords, two packboard attachments, shoulder pads, a lashing rope, and quick-release strap and buckle assemblies. The packboard canvas backrest should fit against your pack, and the packboard frame should support the



Figure 4-38. Litter.

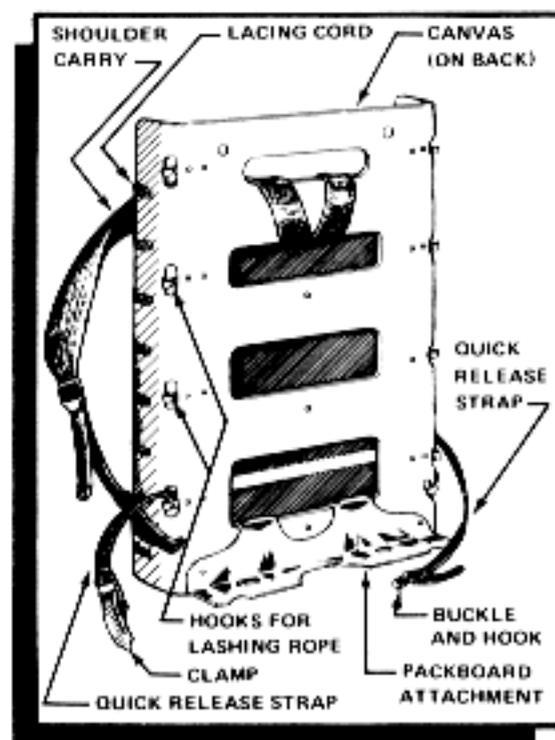


Figure 4-39. Packboard.

load. Before fastening a load to the packboard, make sure the canvas backrest is properly laced to the frame.

**Lacing Canvas Backrest to Frame.** To lace the backrest to the frame, refer to figure 4-40. This procedure should be followed to lace both edges of the canvas.

**Tightening Laces.** Tighten laces on the canvas before packing a load, and retighten them as often as necessary to keep the canvas taut. To tighten lacings, twist the cord around a stick, and pull the cord tight. Lacings may also be tightened by placing the packboard frame on edge, gradually applying gentle pressure until the frame is slightly bowed, and then tightening the lacings. When the pressure is released, the frame will return to its original shape and tighten the canvas.

**Using Packboard Attachment.** Use the packboard attachment (figure 4-41) to support heavy rigid loads at the bottom. To attach the packboard attachment to the packboard, place the flanges of the attachment over the lower edge of one of the

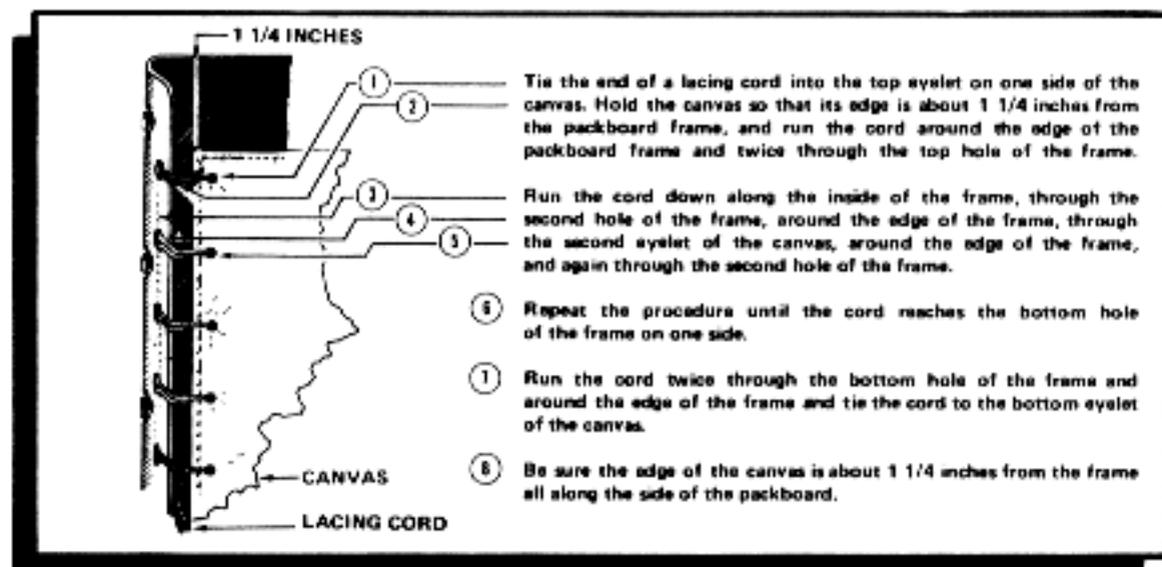


Figure 4-40. Lacing canvas backrest to frame.

openings in the frame. Pack all loads so that they will be compact and can be carried high on your shoulders. Fasten the load to the packboard with a lashing rope or a quick-release strap and clamp assembly.

**Lashing Load to the Packboard With Rope.** Attach bulky, nonrigid, or irregular-shaped loads with a lashing rope. Keep the lashing simple; never use two loops when one will do. Use knots that will hold but will not be hard to untie. Lashing by rope is easier to start if a short loop is tied in one end of the rope so that it may be attached to a hook on the packboard frame. When you can, use a bowline knot to form the loop in the end of the rope. Fasten the coil with a knot, or slip the coil between the canvas and the plywood frame. Always keep the lashing rope attached to the packboard. Wind the rope around the top of the packboard when the packboard is not in use (figure 4-42).

**Four-hook method.** One method of lashing a load with rope, using four packboard hooks, is shown in figure 4-43.

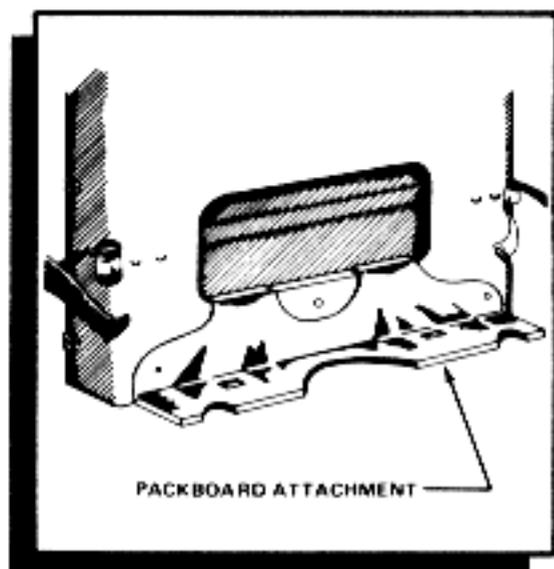


Figure 4-41. Packboard attachment.

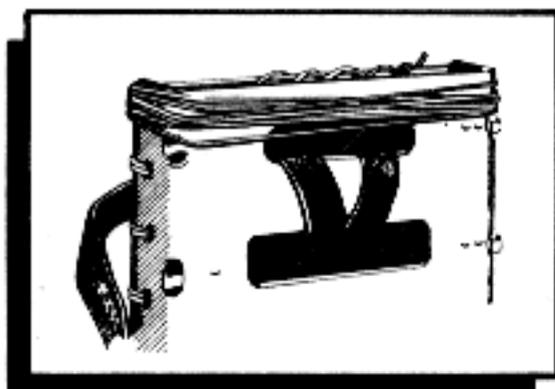


Figure 4-42. Lashing rope wound around top of packboard.

- FIRST...**  
Form a loop in the rope, and place it over hook AA.
- SECOND...**  
Run the rope across the load to hook A.
- THIRD...**  
Run the rope diagonally downward across the load to hook CC, and back across the load to hook C.
- FOURTH...**  
Run the rope back to hook AA as shown and then to point K, and secure the rope with a knot at point K.
- LAST...**  
To tighten the lashing, run the rope from the knot at point K up under point L and back to point K. Tie another knot at point K. (not shown)

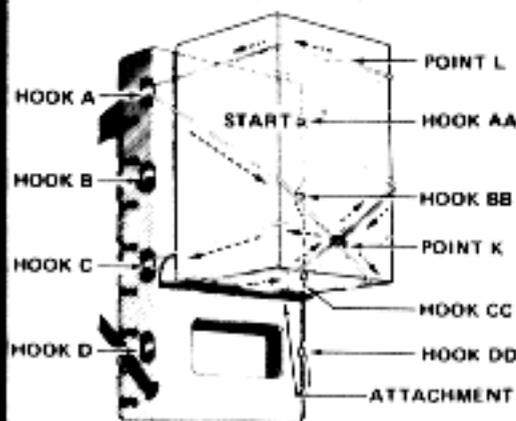


Figure 4-43. Rope lashing method using four hooks.

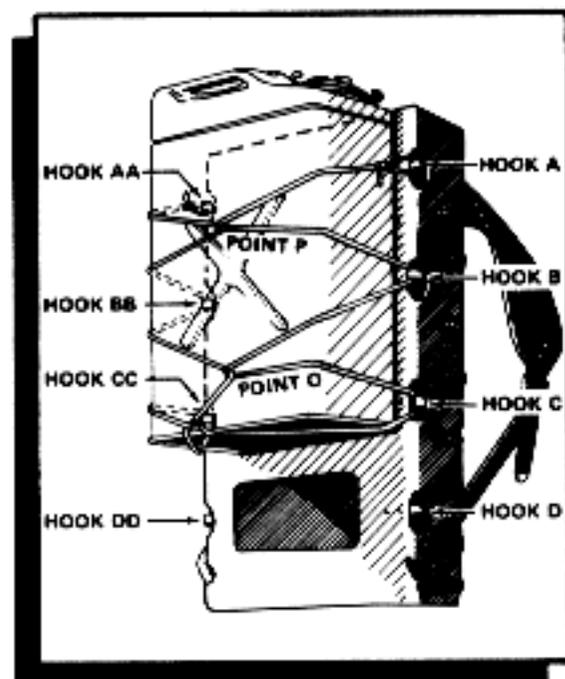


Figure 4-44. Rope lashing method using six hooks.

**Six-hook method.** Another method of lashing loads, using six hooks, is shown in figure 4-44.

**Quick lashing method.** Refer to figure 4-45 for a quick lashing method.

**Lashing Loads With Quick-Release Strap and Clamp Assemblies.** This method is used when loads must be packed and unpacked quickly. To use the quick-release strap, place the load on the packboard with the packboard attachment supporting the load at the bottom. Pass the desired number of straps between the packboard frame and canvas, and fasten them around the load (figure 4-46). The procedure for tightening a quick-release strap and for closing and releasing a quick-release clamp is illustrated in figure 4-47.

**Carrying the Packboard Frame.** When using shoulder pads, place each shoulder strap through the two loops on the surface of one of the shoulder pads. Adjust the shoulder straps so that the packboard will rest high on

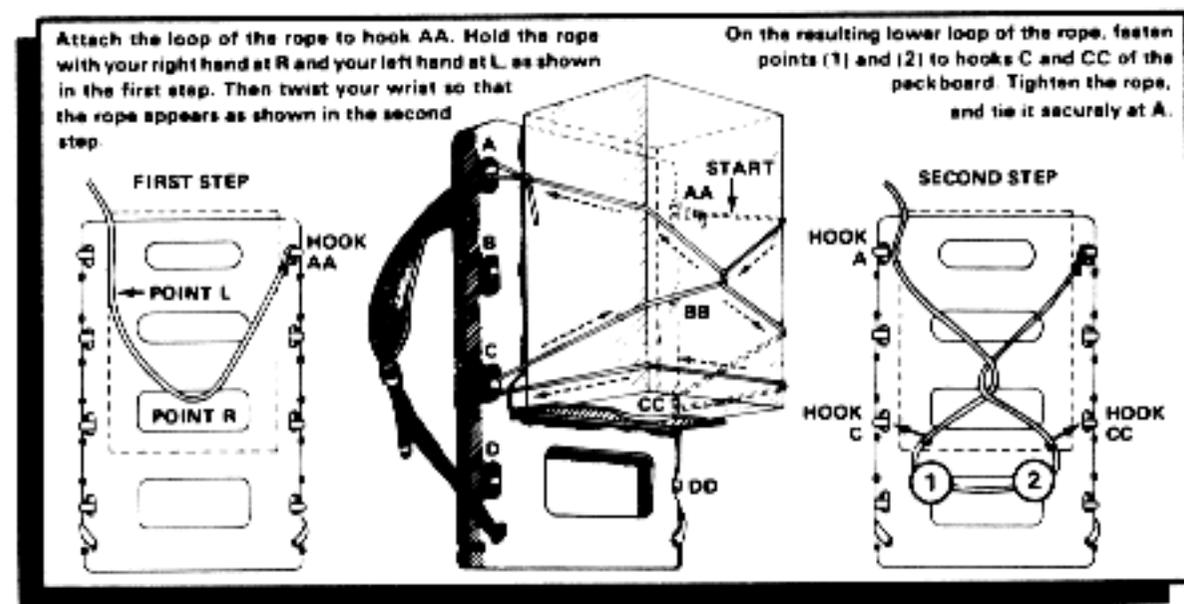


Figure 4-45. Quick lashing method.

your back. If it is not heavily loaded, sling it on your shoulders as you would any other pack, and adjust the shoulder pads for comfort. If it is heavily loaded, place the loaded packboard upright on the ground. Sit with your back against the canvas, and place your arms through the shoulder straps. Roll over on your hands and knees, and stand.

**Caring for Packboard.** Mend or repair damaged fabric components before the damage becomes serious. When fabric becomes soiled, scrape off any caked mud. Scrub the fabric with water and mild soap. Rinse it, and let it dry in the sun. Brush shoulder straps to remove dirt and dust. If excessively dirty, wash and dry them using the same method as for the other fabric. The canvas will need more frequent washing and sunning than the shoulder straps. If the hooks on the frame become loose, tighten them. Make sure the lacings that fasten the canvas backrest to the frame are taut enough to prevent the frame from pressing against your back; a taut canvas also allows air to circulate between



Figure 4-46. Load lashed with quick-release strap and clamp assemblies.

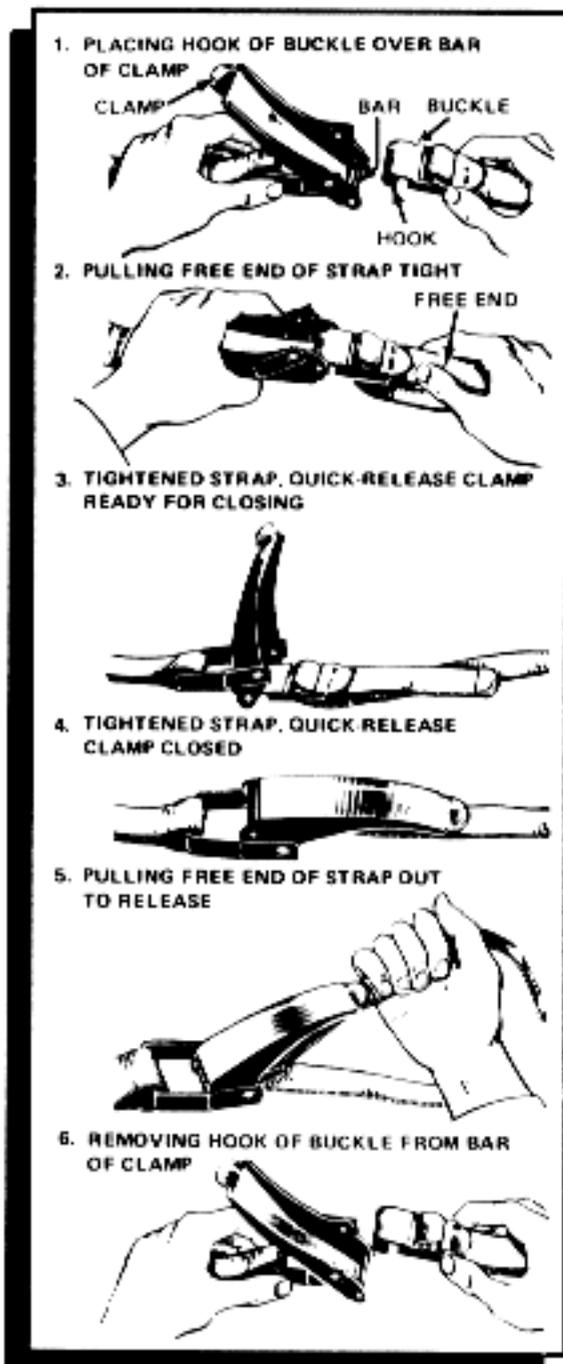


Figure 4-47. Adjusting quick-release strap and clamp assembly.

the frame and your back. Do not drop the packboard; lay it down gently.

### GRENADE-CARRIER VEST

The grenade-carrier vest (figure 4-48) is designed to be worn over the armor vest and the suspenders of the individual load-carrying equipment. It enables you to carry four 40-millimeter pyrotechnic cartridges and twenty 40-millimeter grenades for the M79 and M203 grenade launchers. Each grenade is held in place in the pocket by a snap fastener closure. Each grenade can be removed with one hand. Table 4-1 shows the size vest you should select based on your chest measurement. To clean the vest, use a brush or a damp or dry cloth. Scrub very dirty areas with a small amount of water. Rinse it and let it air-dry.

### BAGS

There are several types of bags which have many uses. These bags are made of a coated

Table 4-1. Grenade-carrier vest sizes.

CHEST MEASUREMENT	SIZE OF VEST
To 38 inches _____	SMALL
39 to 42 inches _____	MEDIUM
43 inches or larger _____	LARGE

material or canvas. To clean them, see the appropriate paragraph in chapter 1.

**Barracks Bag.** Use the olive-green barracks bag (figure 4-49) for general storing and carrying purposes. Close the bag with the drawstring.

**Clothing Bag.** Use the waterproof clothing bag (figure 4-50) to carry extra clothing and personal effects that must be protected from moisture, especially during amphibious or jungle operations. Keep in mind, however, that it is not constructed to withstand rough

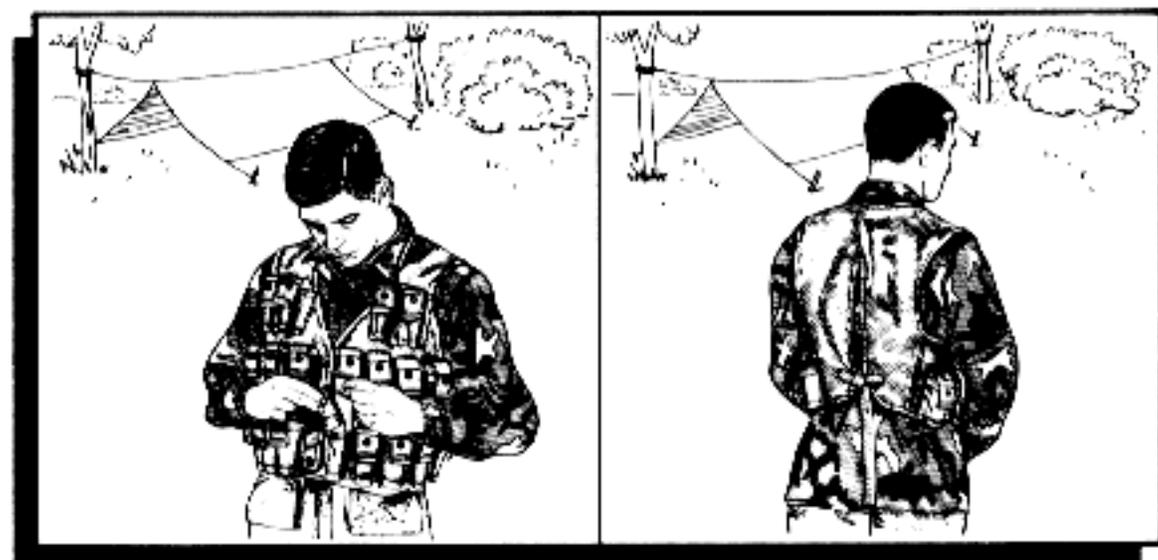


Figure 4-48. Grenade-carrier vest.

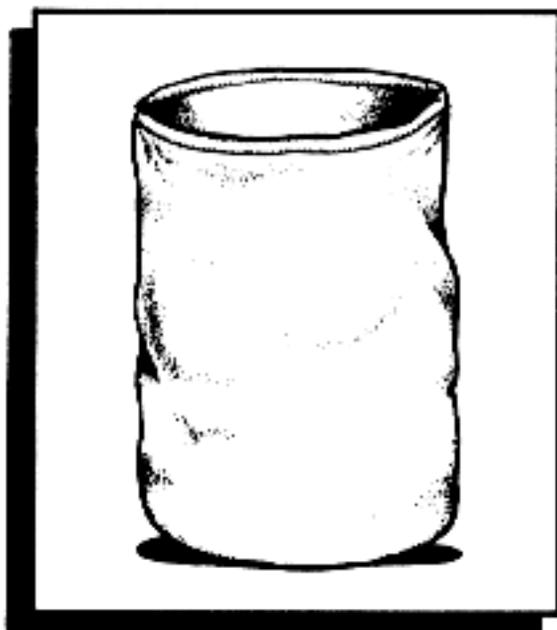


Figure 4-49. Barracks bag.



Figure 4-50. Clothing bag.

use or handling. You can also use the bag to carry and store your sleeping bag and blanket. Close the bag by placing the tie cord around the mouth of the bag, inserting the tie cord ends through one of the three attached loops, wrapping the cord, and tying it with a bow knot.

**Duffel Bag.** Use the duffel bag (figure 4-51) with handle and shoulder straps in the field to carry individual clothing and equipment not carried in the field pack. Close the duffel bag by folding the top of the bag in envelope fashion, placing the grommets over the U-shaped keeper, and attaching the snap on the carrying strap to the keeper. Carry the bag by the handle as a suitcase or by the shoulder straps slung over your shoulders pack-style.

**Waterproof Covers.** Use the multipurpose waterproof covers (bags) to provide lightweight, waterproof protection for small arms against rain and moisture. The dimensions and uses of the covers are shown in

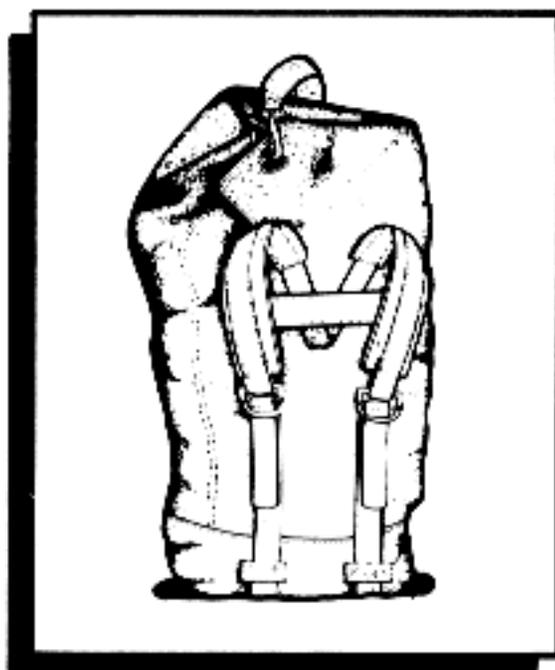


Figure 4-51. Duffel bag.

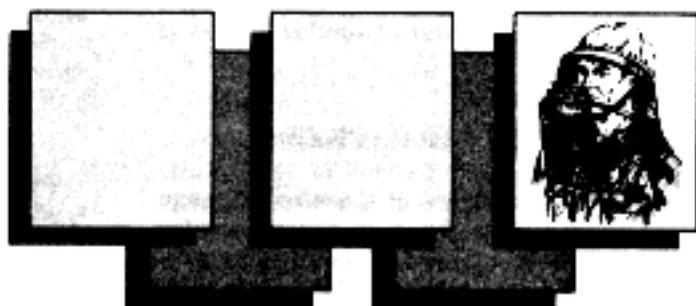
table 4-2. You can also use the multipurpose waterproof covers for—

- Carrying water.
- Protecting miscellaneous small items of clothing and equipment.
- Floating lightweight loads in water-crossing operations. The bag must be inflated for this purpose.
- Lining the duffel bag to form an emergency waterproof clothing bag. For this purpose, use a size 3 cover. Cut about 21 inches off the top of the cover to make it suitable for inserting in the duffel bag.

**Table 4-2. Multipurpose waterproof covers.**

SIZE	DIMENSIONS (inches)	USE
1	08 by 18	For pistol or personal effects.
2	10 by 56	For rifle or carbine.
3	15 by 45	For submachine gun.
4	20 by 84	For machine gun.

## CHAPTER 5

**Miscellaneous Clothing  
and Equipment****MOSQUITO HAT AND NET**

This equipment (figure 5-1) is worn for protection against mosquitoes and other insects. The cloth top piece has an elastic suspension that fits over your head or helmet. You may also wear it between the liner and the helmet. Metal rings hold the net away from your face and neck, even when you are sleeping. The hat and mosquito net fit over the collar in back. They are held in place in front by two elastic loops that can be attached to the pocket buttons of your shirt. An elastic draw tape at the bottom may be drawn tight when the net is not fastened to the pocket bottom. To clean the net, spot wash very dirty areas with hot water and soap or detergent. Rinse it thoroughly and let it air-dry.

**KNITTED WOOL SCARF**

The knitted wool scarf is a seamless tubular type with reinforced ends. It is ordinarily

used for warmth around the neck, but in emergencies you can use it for other purposes. For example, it can be used as a hat or can be wrapped around the hands for additional warmth.



*Figure 5-1. Mosquito hat and net.*

## IDENTIFICATION TAGS AND NECKLACE

Wear your identification tags at all times when you are engaged in field training, while traveling in aircraft, and when outside the continental United States. Suspend one tag from your neck, underneath your clothing, using a 25-inch, noncorrosive, nontoxic, heat-resistant material, looped to form a necklace. Attach the second tag to the necklace using a 2 1/2-inch loop of material similar to that of the necklace.

## FIRST AID PACKET

The first aid packet is a sealed package containing sterilized cotton gauze used for emergency dressing of wounds when medical services are not quickly available. **DO NOT OPEN THE PACKET UNTIL IT IS NEEDED.** Exposure to air may cause the contents to become soiled and nonsterile.

## COMPASS

Use the lensatic compass to establish direction. An accurate line of direction can be established for a specific object by using the arrangement of a lensatic eye lens, a sight line, and the object being sighted. When you are not using the compass, keep it in its case to protect it from dirt and dust.

## WATERPROOF MATCHBOX

The waterproof matchbox (figure 5-2) is used to keep matches dry and to start fires by spark ignition in an emergency. The box is a small, cylinder-shaped, plastic container with a screw cap, a striking disk, and a striking bar.

**Screw Cap.** A sealing gasket fits inside the screw cap and provides a tight seal when the cap is closed by hand, tight onto the cylinder.

**Striking Disk.** The striking disk is mounted on the inside top surface of the cap. It has an abrasive surface for striking safety matches.

**Striking Bar.** The striking bar is located on the bottom of the container. When the bar is struck with the sharp edge of a knife or some other piece of metal, a spark will be produced.

## INTRENCHING TOOL

The collapsible intrenching tool (figure 5-3) is about 9 1/2 inches long when collapsed and 23 1/2 inches long when fully extended. It has a hollow, triangle-shaped handle. One

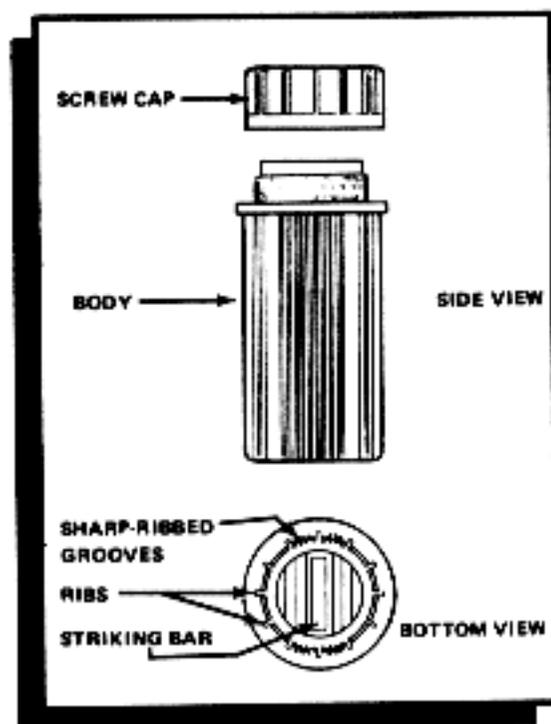


Figure 5-2. Waterproof matchbox.

edge of the blade is sharpened for cutting. The other edge is serrated to aid in digging and chopping. The position of the blade can be changed by loosening the locking nut at the blade end of the handle, adjusting the blade to the desired position, and tightening the locking nut.

**Use.** Use the intrenching tool for digging, breaking hard ground, clearing brush or undergrowth, and cutting roots, saplings, and small trees. **DO NOT USE IT FOR CUTTING LARGE-SIZE TIMBER.**

**Shoveling or cutting.** Extend the shovel blade outward in a straight-line projection of the handle (open position). Tighten the locking nut.

**Clearing ground.** Turn the shovel blade to a position perpendicular (upright) to the handle so that it is hoe-shaped. Tighten the locking nut.

**Care.** Clean the intrenching tool after each use. Keep the threads on the locking nut clean and oiled so the nut will turn easily.

### CANVAS COT AND INSECT BAR FRAME

The collapsible canvas cot (figure 5-4) has three sets of folding legs. The insect bar frame consists of four upright pieces of wood which are attached to the end cot legs with steel clips. Two crosspieces serve as braces.

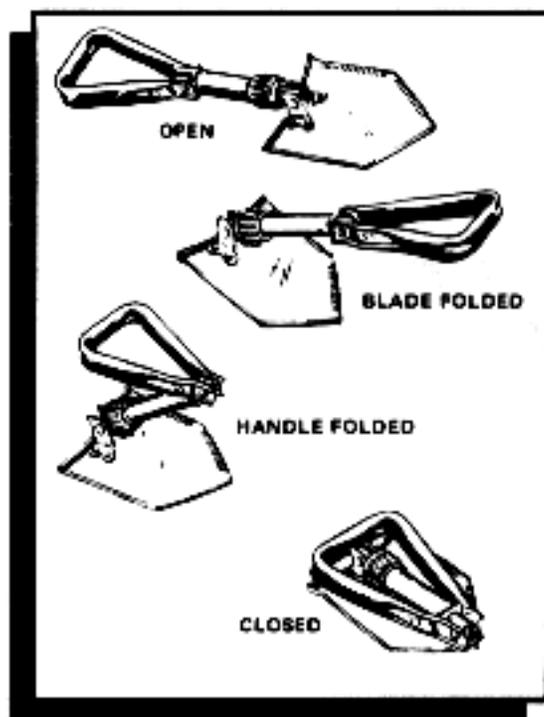


Figure 5-3. Intrenching tool.

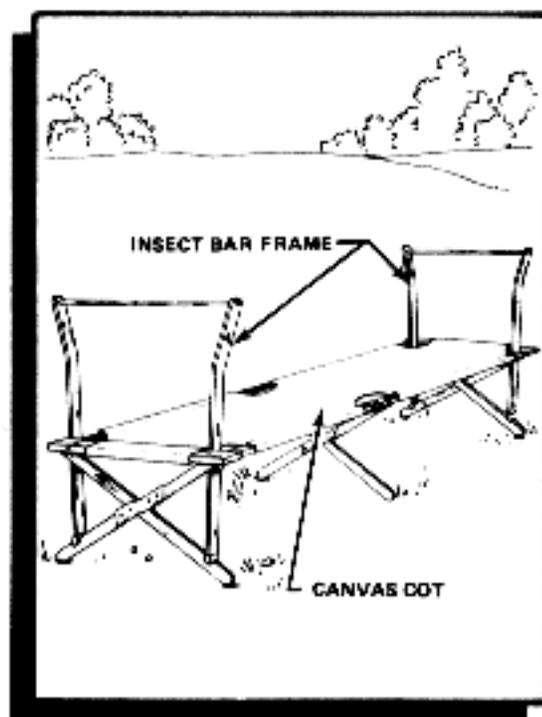


Figure 5-4. Canvas cot and insect bar frame.

## INSECT BAR

The insect bar (figure 5-5) is a canopy made from finely woven nylon mesh.

**Use.** Use the insect bar to protect you from mosquitoes, sand flies, and other small insects. Use the following information to help you set up the insect bar.

**Suspending the bar over a cot or bed.** To use the insect bar with a wooden cot or a bed, attach a wooden insect bar frame to each end of the cot. Tie the tie tapes of the insect bar to the top corners of each frame. To use the insect bar with a metal bed, attach a T-shaped metal frame to each end of the bed. Tie the tie tapes at the top corners of the insect bar to the ends of the crosspieces at the top of each T-shaped frame.

**Fastening the bar inside a shelter-half tent.** Fasten the insect bar inside the shelter-half tent while the tent is being pitched. First, snap the shelter halves together. Place them over the spread-out insect bar so that the foot stops of the tent are aligned with the tie tapes

near the bottom edges of the insect bar. The grommets at the ridge of the tent should be aligned with the slits at the top of the insect bar. Next, place the tent poles through the slots at the top of the insect bar and through the grommets at the ridge of the tent. After folding the tent end sections over the sides of the tent, tie the tapes near the bottom edges of the insect bar around the tent pins.

**Suspending the bar from trees or bushes.** For protection outdoors when a tent is not available, suspend the insect bar by tying the tie tapes at the top corners to trees or bushes.

**Care.** Spot wash very dirty areas with hot water and soap or detergent. Rinse the insect bar thoroughly and air-dry it.

**Packing.** Fold the insect bar into a small bundle, and either place it in the field pack or attach it to the pack. It may also be placed in the duffel bag.

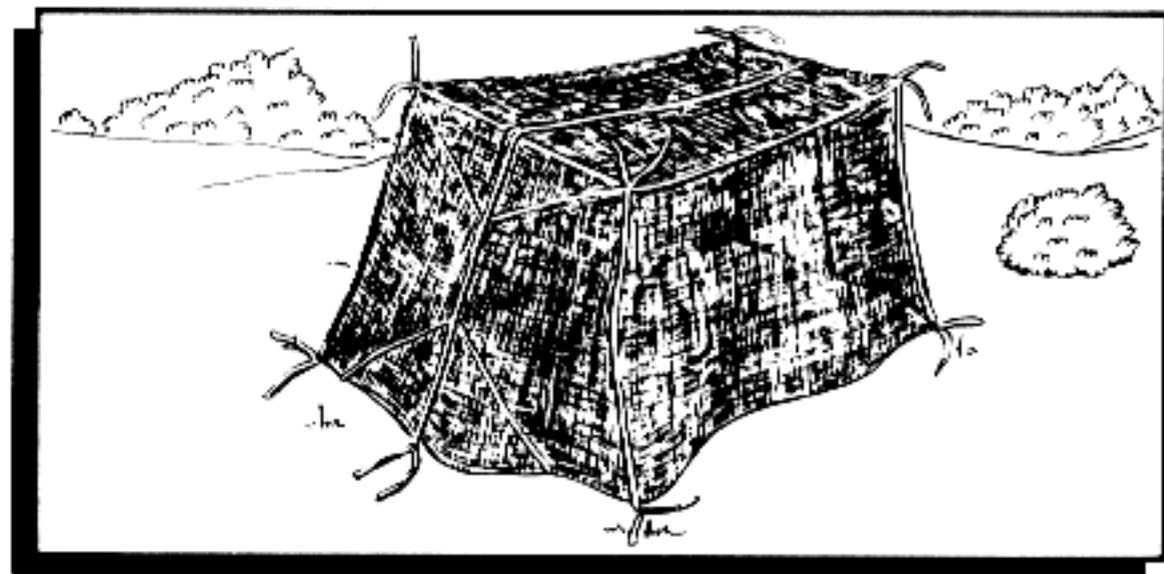


Figure 5-5. Insect bar.

### MULTIPURPOSE NET

The nylon multipurpose net (figure 5-6) is about 5 feet wide and 9 feet long. Two cords, about 14 feet long, are packed with each net. When folded, the net can be attached to the individual equipment belt in a way similar to that described for the poncho. You can use the net as a hammock, a camouflage net, a carrier for bulky loads, a litter, a net, a trap for game, a storage place for food or ammunition, a sniper's roost, and many other field expedients. You will find detailed information on the multipurpose net in TM 10-276.

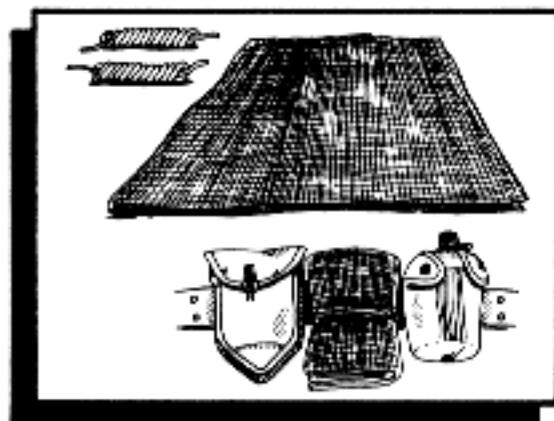


Figure 5-6. Multipurpose net.

### ONE-QUART CANTEEN AND CUP

Your plastic (polyethylene) water canteen (figure 5-7) holds 1 quart. The olive-green canteen, which fits into the standard metal cup, has a plastic screw cap with an attaching strap and is carried in the standard canteen cover. Wash the canteen and cup with warm, soapy water and rinse them thoroughly. Keep them drained and dry when not in use. Do not force the plastic cap on the canteen; the cap may split. **DO NOT PUT THE PLASTIC CANTEEN NEAR AN OPEN FLAME OR BURNER PLATE.**



Figure 5-7. One-quart canteen and cup.

### TWO-QUART CANTEEN AND COVER

The 2-quart canteen (figure 5-8) is a collapsible plastic container. Care for it the same way as for the 1-quart canteen. The cover for the canteen attaches to the pistol belt with standard clips and has a detachable shoulder strap. The case also has an external pouch for a bottle of iodine disinfectant tablets. A bag-and-case-carrying sling can also be used to carry the 2-quart canteen. Clean the sling with mild soap and water, and let it dry.

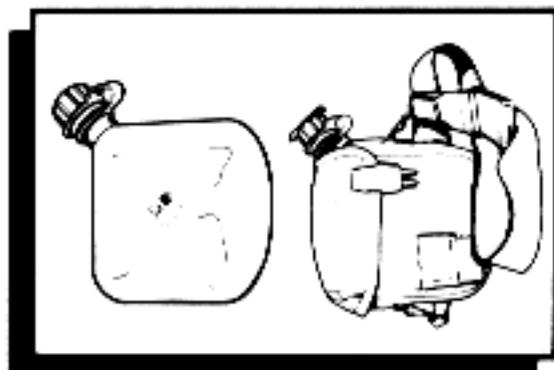


Figure 5-8. Two-quart canteen and cover.

## MESS GEAR

Your mess gear (figure 5-9) consists of the mess kit pan and lid and the field mess knife, fork, and spoon. Before using your mess gear, clean it and dip it in boiling water for at least 3 seconds. **EATING WITH GREASY OR DIRTY MESS GEAR MAY CAUSE SERIOUS ILLNESS OR MAKE THE FOOD LESS APPETIZING.** As soon as possible after you finish eating, scrape off food particles. Dip mess gear in a hot soap, detergent, or hand-washing solution. Use a brush, if you have one, to wash off food or grease. Rinse gear thoroughly for about 30 seconds in clean, boiling water. Air-dry the gear by swinging it back and forth until it is dry. **NEVER WIPE MESS GEAR WITH A CLOTH OR TOWEL.**



*Figure 5-9. Mess gear.*

## Glossary

ALICE	all-purpose lightweight individual carrying equipment
DA	Department of the Army
F	Fahrenheit
FM	field manual
HQ	headquarters
NBC	nuclear, biological, chemical
NO	number
NSN	national stock number
PASGT	personnel armor system ground troop
TM	technical manual
TRADOC	United States Army Training and Doctrine Command
US	United States (of America)

## Related References

Related references are sources of additional information. They are not required in order to understand this publication.

### ARMY REGULATIONS

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32-4	Special Measurement Clothing and Footwear, Orthopedic Footwear, Guidons, Streamers and Flags
640-3	Identification Cards, Tags, and Badges
670-1	Wear and Appearance of Army Uniforms and Insignia
700-84	Issue and Sale of Personal Clothing
700-86	Life Cycle Management of Clothing and Individual Equipment

### COMMON TABLE OF ALLOWANCES

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50-900	Clothing and Individual Equipment
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### DA FORM

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2028	Recommended Changes to Publications and Blank Forms
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### DA PAMPHLETS

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108-1	Index of Army Motion Pictures and Related Audio-Visual Aids
310-1	Consolidated Index of Army Publications and Blank Forms

### FIELD MANUALS

---

10-16	General Repair of Tents, Canvas, and Webbing
10-17	Army Fixed Laundry, Organization and Operation
10-267	General Repair for Clothing and Textiles
10-280	Field Laundry, Clothing Exchange, and Bath Operations
21-11(TEST)	First Aid for Soldiers
21-18	Foot Marches
21-40	NBC (Nuclear, Biological, and Chemical) Defense
21-75	Combat Training of the Individual Soldier and Patrolling
22-5	Drill and Ceremonies
22-6	Guard Duty

### SUPPLY BULLETIN

---

10-523	Size Tariff for Clothing, Equipage, and Footwear.
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**TECHNICAL BULLETIN** 

---

QM 13                      Clothing, Equipment, and Rations for Use in the Jungle

**TECHNICAL MANUALS** 

---

3-4240-279-10            Operator's Manual: Mask, Chemical-Biological; Field ABC-M17, M17A1, and M17A2

3-4240-280-10            Operator's Manual for Mask, Chemical-Biological: Aircraft, ABC-M24 and Tank, M25 and M25A1 and Accessories

9-1300-200                Ammunition, General

10-227                     Fitting of Army Uniforms and Footwear

10-276                     Hot Weather Clothing and Equipment

10-277                     Chemical, Toxicological and Missile Fuel Handlers Protective Clothing

10-8340-221-13           Operator's, Organizational and Direct Support Maintenance Manual: Tent, Shelter Half and Tent, Mountain, Two-Man

10-8400-201-23           Organizational and Direct Support Maintenance Manual: General Repair Procedure for Clothing and Individual Equipment

10-8465-202-23           Organizational and Field (Third Echelon) Maintenance Manual: Packboard, Plywood

57-220                     Technical Training of Parachutists

**TRAINING CIRCULAR** 

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21-3                        Soldier's Handbook for Individual Operations and Survival in Cold Weather Areas

**TRAINING FILMS** 

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10-2430                    Fitting Army Uniforms and Footwear—Fitting of Footwear

10-3092                    Individual Load Carrying Equipment

10-3593                    Individual Load Carrying System—Variations of Use

10-4223                    Hot Weather Clothing and Equipment

10-4300                    Care and Storage of Tentage

10-4780                    How to Use Cold Weather Clothing