

APPENDIX J

PROCEDURES FOR LITTER EVACUATION TRAINING**J-1. General**

To safely transport a patient by litter and to ensure litter bearers are not injured by using incorrect lifting procedures, training is required for litter bearers. This appendix provides the techniques and procedures necessary to accomplish litter evacuation.

J-2. Basic Guides for Training Litter Bearers

Litter bearers are normally grouped into squads of four to carry patients. For this reason, litter procedures for squads of four are effective in training individuals to be litter bearers. The following guidelines promote uniformity and accuracy in training methods:

- Several squads may be trained at the same time by one individual, or each squad may be instructed separately by an instructor or trained squad leader.
- For the initial training procedures, a litter without a patient on it can be used to simulate a loaded litter.
- For later training, some personnel can be designated as *patients*. These individuals should be frequently rotated with the ones carrying the litters so that all may participate in each phase of instruction.
- For more realistic training in the handling of the different types of injuries, *patients* may wear moulages, bandages, and splints to simulate actual wounds or injuries.
- The persons designated as *patients* may be positioned on the ground at suitable intervals near a line of litters, first with the head and later with the feet toward the litters. As the instruction progresses, their positions may be varied. Lastly, they may be dispersed or concealed to simulate positions that the wounded might occupy on a battlefield.

J-3. Litter Commands

Litter procedures are not to be considered precision drills; however, certain preparatory commands and commands of execution are used to facilitate instruction. A *preparatory command* states the movement or formation to be carried out and mentally prepares the individual for its execution. A *command of execution* tells when the command is to be carried out. For purposes of identification in the discussion of the different types of procedures, preparatory commands will be in lower case with initial capital letters and commands of execution will be in capital letters.

NOTE

The use of formal commands is for training and their use is not anticipated during combat operations.

J-4. Formation for Instruction

First, align the trainees into four ranks; then give the commands to form litter squads. This is accomplished as follows:

- a.* The trainees count off from front to rear, one through four, thus forming the litter squads and designating each trainee's position in the litter squad by number. Each number carries with it specific responsibilities in the litter squad. The trainee designated number 1 is the squad leader.
- b.* The squad leaders count off from right to left, designating a number for each litter squad.
- c.* The formation is then opened to provide each squad adequate space for performance.
- d.* Since exceptional circumstances may make it necessary to use two-bearer litter squads, the instruction should include procedures for these reduced squads, using bearers 2 and 3 of the four-bearer squad.

J-5. Procedures to Procure, Ground, Open, Close, and Return the Litter

a. To Procure Litter. Upon the command of Procure, LITTER, the squad leader (bearer number 1) steps forward, goes to the source of supply, picks up the litter, and returns to his original position covered by bearers numbers 2, 3, and 4.

(1) The closed litter is carried at high port except near helicopters where it is kept level with the ground to avoid contacting the rotor blades. At high port, the litter is carried diagonally across the body with the left wrist in front of the left shoulder and the right wrist near the right hip (Figure J-1).

(2) After bearer number 1 returns to his original position in the squad, he holds the litter in an upright position on his left side with the metal stirrups away from his body (Figure J-2).

b. To Ground Litter. Upon command of Ground, LITTER, bearer number 1 lowers the litter to the ground. With the litter squad in formation, bearer number 1 places his left foot beside the litter handles, steps forward with his right foot, and lowers the litter to the ground so that it rests on the stirrups (Figure J-3). Then upon command of Litter, POSTS, the other three bearers move into their positions at the sides of the litter. Bearer number 2 moves to the right front, bearer number 3 moves to the left rear, and bearer number 4 moves to the left front (Figure J-4).

c. To Open Litter. Upon command of Open, LITTER, all bearers face the litter and execute the command. With all bearers facing the litter, bearers numbers 2 and 3 pick up the litter from the ground and support it, while bearers numbers 1 and 4 unfasten the litter straps. (Figure J-5). Bearers numbers 2 and 3 extend the litter by pulling the handles apart with the canvas up. Then bearer number 2 lowers his end of the litter to the ground and bearer number 3 raises his end of the litter until it is in a vertical position. Using his foot, bearer number 3 extends the lower spreader bar into a locked position, reverses the litter, and extends the other spreader bar. Bearer number 3 then lowers the litter to the ground with the canvas in the up position (Figure J-6).

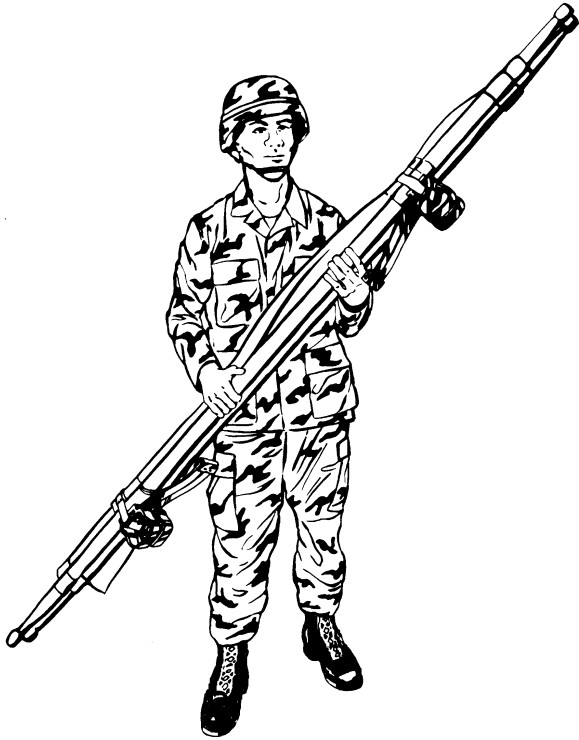


Figure J-1. Carrying litter at high port.

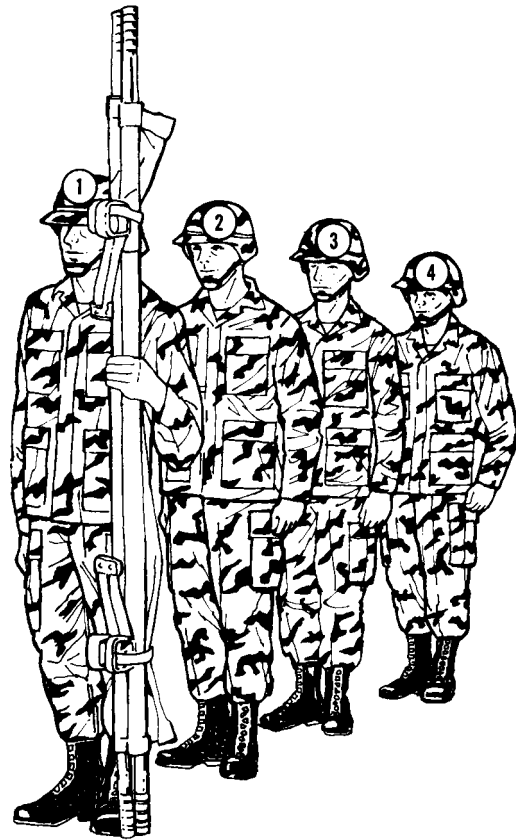


Figure J-2. Litter squad with litter.



Figure J-3. Grounding litter (step one).



Figure J-4. Grounding litter (step two) (position of Litter, POSTS).

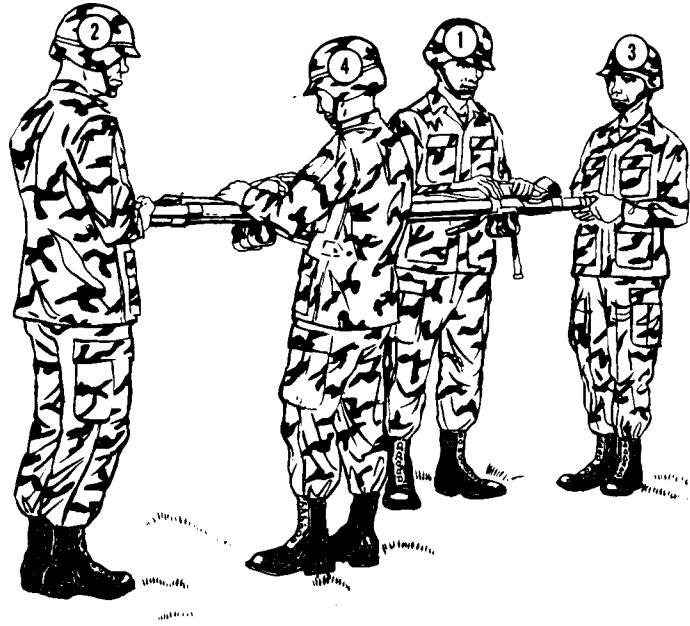


Figure J-5. Opening litter (step one).

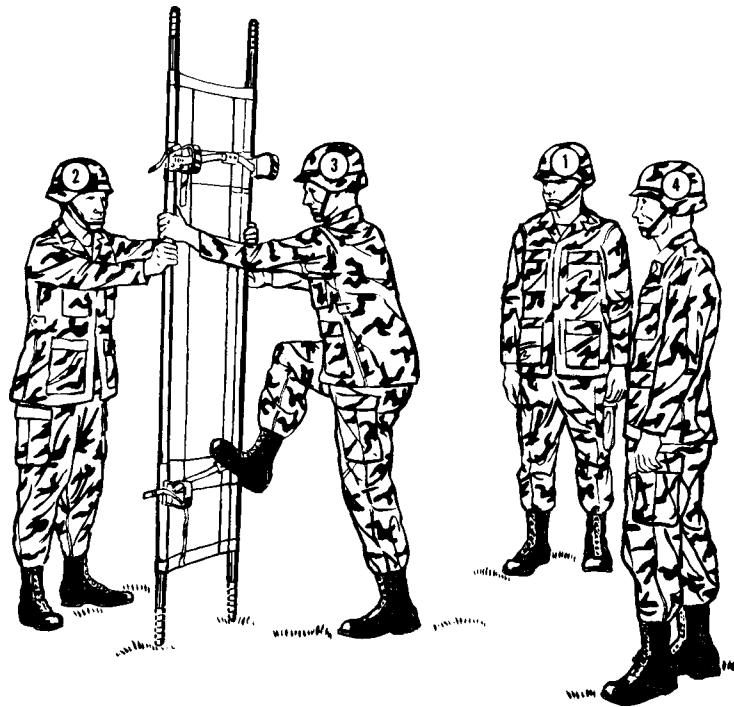


Figure J-6. Opening litter (step two).

d. *To Close Litter.* Upon command of Close, LITTER, bearer number 2 supports the litter while bearer number 3 releases the spreader bars and turns the bars against the litter poles. Bearers numbers 2 and 3 then lift the litter, move the poles together, and support the litter. Bearers numbers 1 and 4 fold the canvas smoothly on top of the poles and secure the canvas and the poles in place with the litter straps.

e. *To Return Litter.* At the completion of the instruction and upon command of Return, LITTER, bearer number 1 returns the litter to supply.

J-6. Procedures for Loading a Patient onto a Litter

After the patient has been located, the general nature of his wounds determined, emergency treatment given, and the litter opened and positioned, the bearers load the patient onto the litter.

a. *To Load a Litter (Four Bearers).* Upon the following commands, the bearers position themselves, lift the patient, position the litter, and lower the patient onto the litter:

(1) At the command, Right (Left) Side, POSTS, the bearers take the following positions facing the patient: bearer number 2 at the right (left) ankle; bearer number 3 at the right (left) shoulder; bearers numbers 4 and 1 at the right and left hips, respectively (Figure J-7).

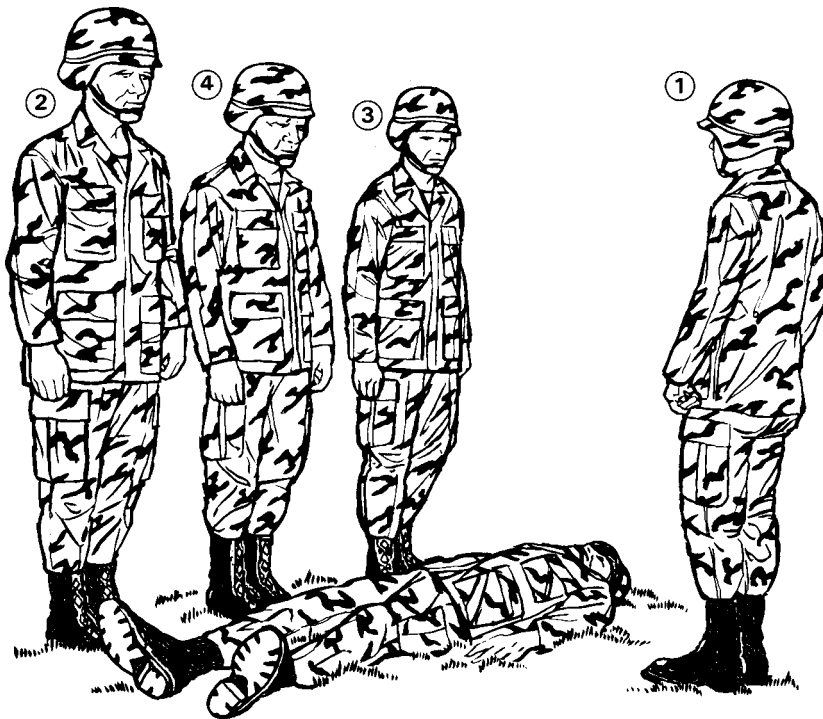


Figure J-7. Squad at right side, POSTS.

(2) At the command, Lift, PATIENT, each bearer kneels on his knee that is nearest the patient's feet. Bearer number 2 passes his forearms under the patient's legs, carefully supporting any fracture, if required. Bearers numbers 1 and 4 place their arms under the small of the patient's back and thighs without locking hands. Bearer number 3 passes one hand under the patient's neck to the farther armpit and uses the other hand to support the nearer shoulder. All bearers lift the patient slowly and carefully and place him upon the knees of the three bearers who are on the same side (Figure J-8).

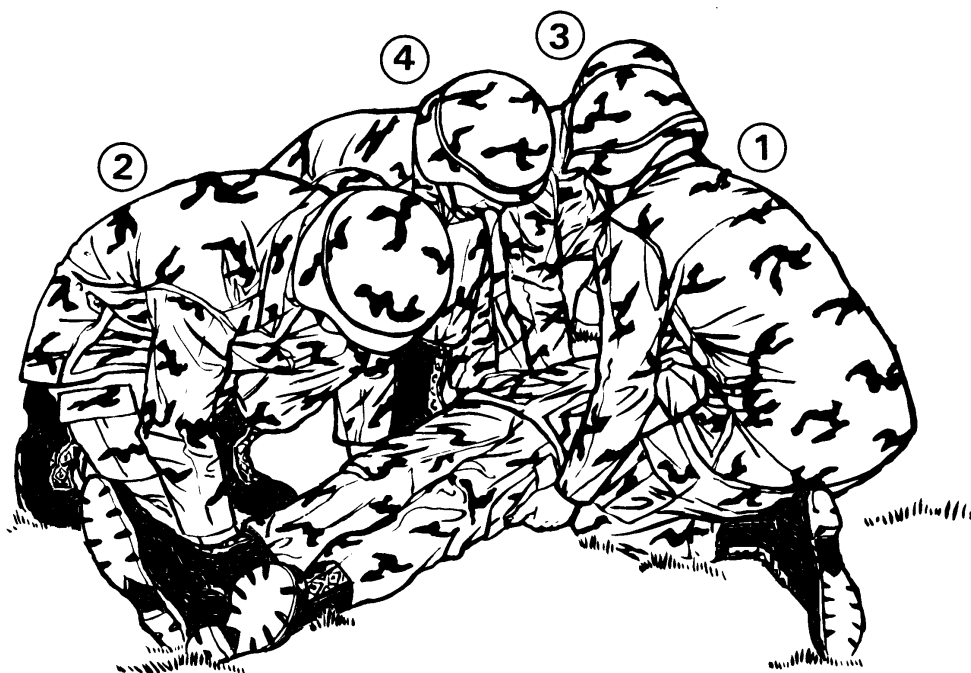


Figure J-8. Lifting patient to load litter (step one).

(3) At the preparatory command Lower, bearer number 1 resumes his former kneeling position opposite the other three bearers and prepares to assist in lowering the patient. As soon as the patient is firmly supported on the knees of the three bearers, the bearer on the opposite side (bearer number 1) relinquishes his hold and reaches for the litter (Figure J-9). He places the litter under the patient and against the ankles of the other bearers. At the command of execution, PATIENT, the patient is lowered gently onto the litter (Figure J-10). Without further orders, all bearers rise and resume their positions at Litter, POST.

b. To Load Litter (Three Bearers). In the absence of one man from the litter squad, bearers numbers 2 and 3 with the assistance of bearer number 1, lift the patient and lower him onto the litter. To lift the patient with three bearers, bearer number 2 places his arms under the legs and thighs of the patient. Bearer number 3 places his arms under the small of the back and shoulders of the patient. Bearer number 1,

on the opposite side of the litter, places his arms under the patient's knees and back. The patient is supported on the knees of bearers numbers 2 and 3, while bearer number 1 places the litter in position (Figure J-11). All three bearers lower the patient onto the litter (Figure J-12). The procedures are performed upon the commands cited in paragraph *a* above.



Figure J-9. Lifting patient to load litter (step two).

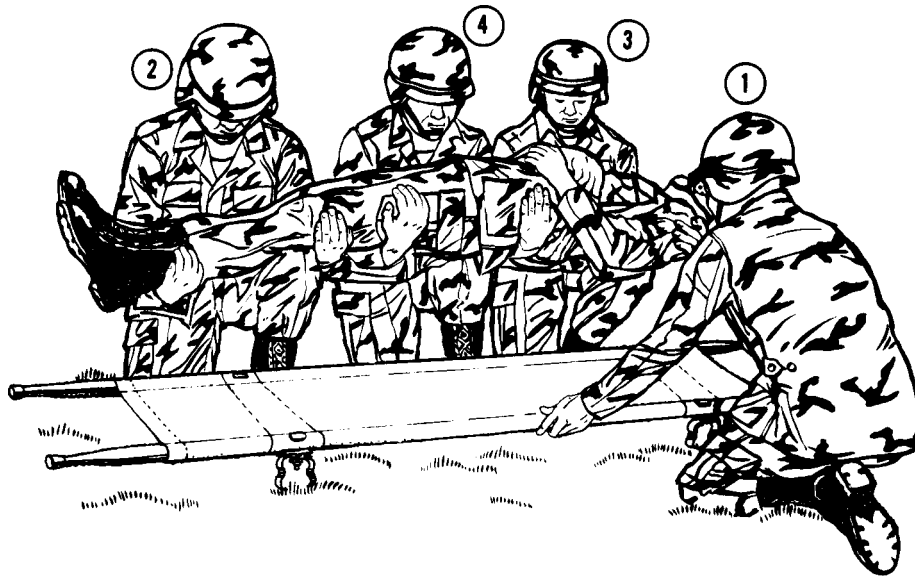


Figure J-10. Lifting patient to load litter (step three).

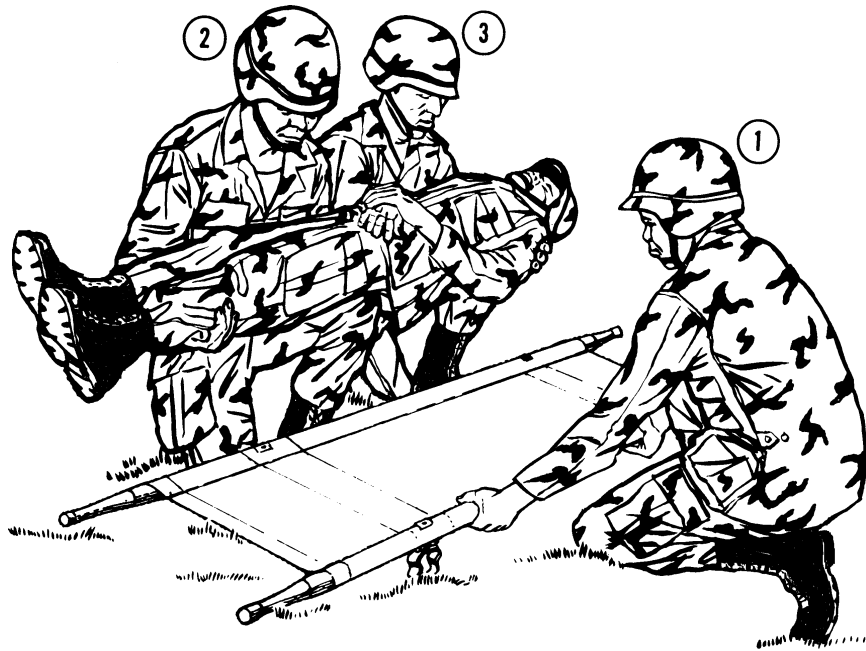


Figure J-11. Lifting patient to load litter (three bearers).

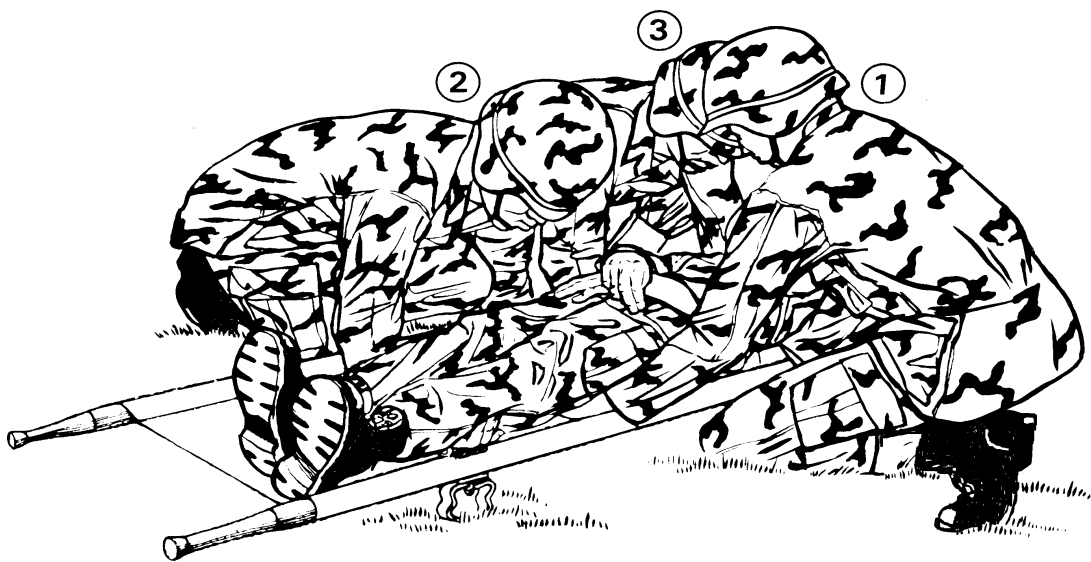


Figure J-12. Lowering patient onto litter (three bearers).

c. *To Load Litter (Two Bearers)*. The procedures for loading litters with the two bearers on the same side are illustrated in Figures J-13 through J-16.

(1) At the command to Right Side, POSTS, bearers numbers 1 and 2 take positions at the patient's right thigh and shoulder, respectively (Figure J-13).



Figure J-13. Two bearers at right side, POSTS.

(2) At the preparatory command, Lift, each bearer kneels on his knee nearer the patient's feet. Bearer number 1 passes his arms beneath the patient's hips and knees. Bearer number 2 passes his arms beneath the small of the patient's back (Figure J-14).

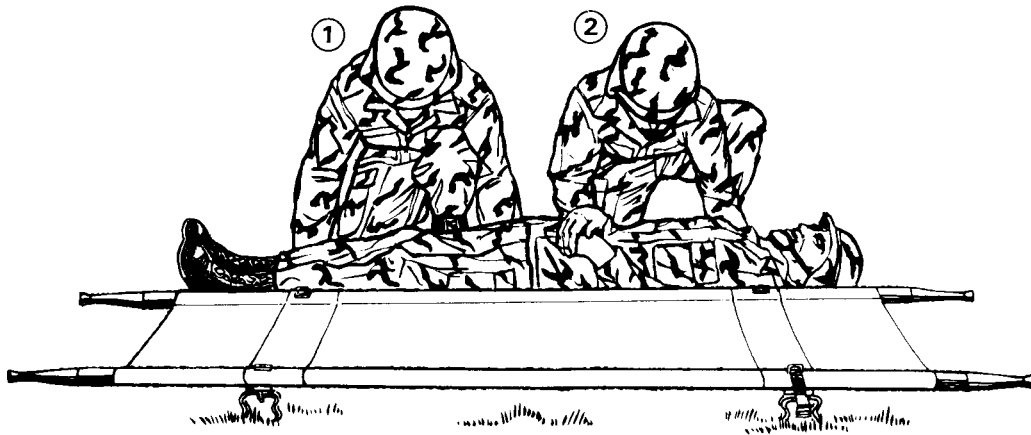


Figure J-14. Lifting patient with two bearers on the same side (step one).

(3) At the command of execution, PATIENT, the bearers lift together, raising the patient upon their knees. Readjusting their hold, they rise to their feet and move as close as possible to the side of the litter (Figure J-15).

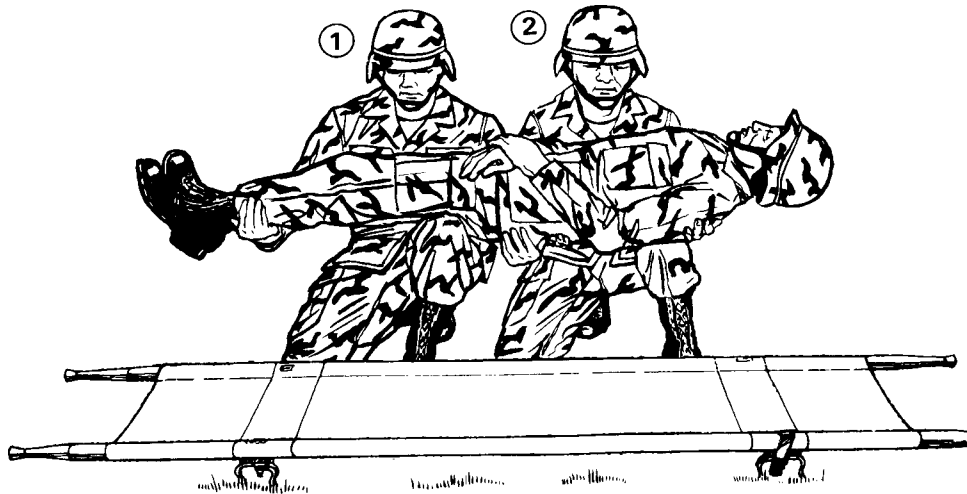


Figure J-15. Lifting patient with two bearers on the same side (step two).

(4) At the preparatory command, Lower, the bearers kneel and place the patient on their knees. At the command of execution, PATIENT, the bearers gently place the patient onto the litter (Figure J-16). They then rise and resume the position of Litter, POSTS, without command.



Figure J-16. Lowering patient onto litter with two bearers on the same side.

d. *To Load Litter with Conscious Patient (Two Bearers)*. If the patient is conscious and able to hold onto the bearers, the following procedure is used:

(1) At the command, *On Each Side, POSTS*, bearers numbers 1 and 2 face the patient and take positions at the patient's right and left hips, respectively (Figure J-17).

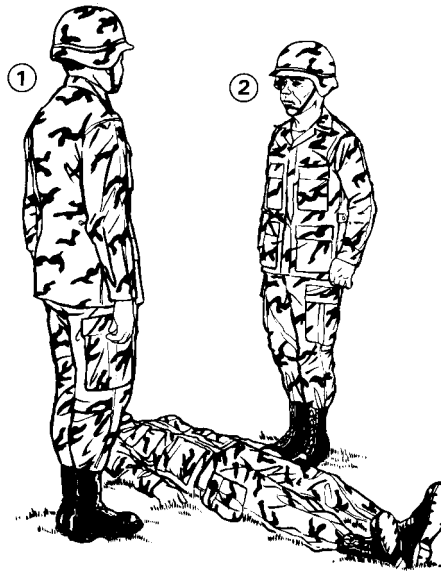


Figure J-17. *Two bearers, one on each side, POSTS.*

(2) At the command of execution, *PATIENT*, the bearers lift the patient, both rising together, and carry him to the center of the litter (Figures J-18 and J-19).



Figure J-18. *Lifting patient with two bearers, one on each side (step one).*

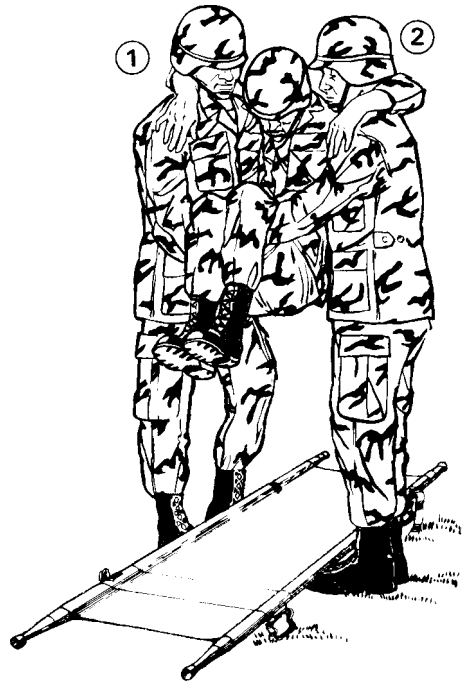


Figure J-19. Lifting patient with two bearers, one on each side (step two).

(3) At the command, Lower, PATIENT, the bearers stoop and lower the patient onto the litter in a sitting position. The patient then releases his hold on the bearers' necks. Both bearers assist the patient to lie down. They then resume the position of Litter, POSTS, without commands (Figure J-20).

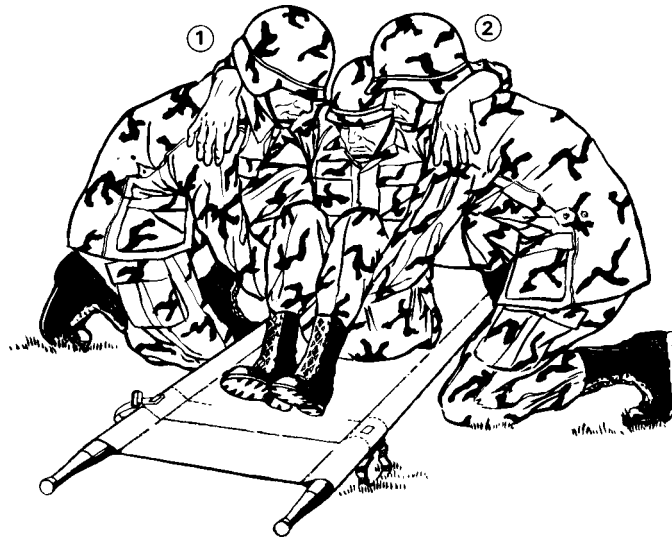


Figure J-20. Lowering patient onto litter (two bearers, one on each side).

e. To Load Patient with Back Injury. To avoid aggravating the condition of a patient with an actual or suspected back injury, the bearers proceed as follows (Figure J-21):

(1) Each bearer kneels on his knee nearer the patient's feet. (If the patient is unable to hold his arms in front of him, his wrists should be tied loosely before placing him on the litter. This will prevent injury to his arms.)

(2) Bearer number 1 places a blanket, coat, or jacket in a firm roll or in a position to support the arch of the patient's back. Bearer number 3 places one hand under the patient's head and the other hand under his shoulders. Bearer number 4 places his hands under the small of the back and buttocks. Bearer number 2 places his hands under the thighs and calves. Bearer number 1 assists bearer number 4 in supporting the small of the patient's back.

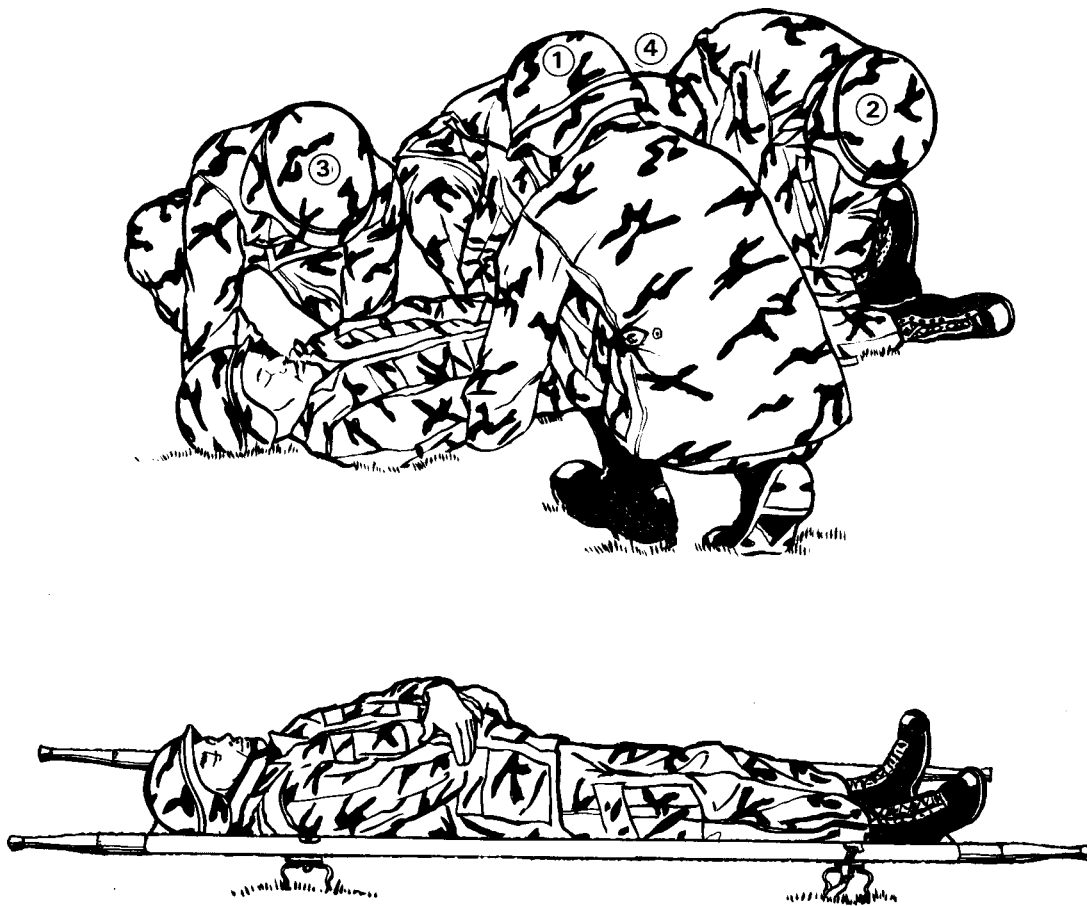


Figure J-21. Lifting patient with back injury.

(3) At the command, Lift, PATIENT, all bearers gently lift the patient off the ground about 8 inches. Bearers ensure that proper alignment is maintained. Bearer number 1 places the litter under the patient and adjusts the roll under the patient's back.

(4) At the command, Lower, PATIENT, the three bearers lean forward and with the aid of bearer number 1, lower the patient onto the litter.

J-7. Procedures for Carrying a Loaded Litter

After the patient has been loaded onto the litter, the litter is lifted and carried as described below.

a. To Lift Loaded Litter. Resuming the position of Litter, POSTS, and facing in the direction of travel, the bearers lift the loaded litter upon the command Prepare to Lift, LIFT (Figure J-22).

(1) At the preparatory command, Prepare to Lift, each bearer kneels on his knee closest to the litter. He grasps the litter handle with the hand nearest the litter and places his other hand on his raised knee.

(2) At the command of execution, LIFT, all bearers rise together keeping the litter level. When lifting, bearers should use leg muscles, not their back muscles.



Figure J-22. Lifting the loaded litter.

b. To Carry a Loaded Litter. The type of carry used in transporting a litter patient depends upon the type of terrain as well as the obstacles involved. It may be necessary to use several types of carries.

(1) After the bearers lift the loaded litter, they are in position for the four-man carry (Figure J-23) which is used when the terrain is smooth and level. The command to proceed is Four-Man Carry, MOVE. With modifications, this carry is also used to pass under low obstacles.

(2) The command Two-Man Carry, MOVE, is given to enable the litter squad in a four-man carry to pass through or over narrow passages such as trails, bridges, gangplanks, and catwalks (Figure J-24). After the litter bearers reach the end of such passages, they change back to the four-man carry. With modification, this carry can also be used to pass through such obstacles as culverts or tunnels. Both bearers carrying the litter face the patient and crawl on their knees through these obstacles. This requires one bearer to crawl backwards.

(a) With the litter squad in the position of the four-man carry, the preparatory command, Two-Man Carry, is given. Bearers numbers 2 and 3 change their holds on the litter handles to the other hand, step between the handles, and take the full support of the litter as bearers numbers 1 and 4 release their holds.

(b) Bearer number 1 steps one pace in front of the squad to lead, and bearer number 4 falls one pace to the rear to follow.

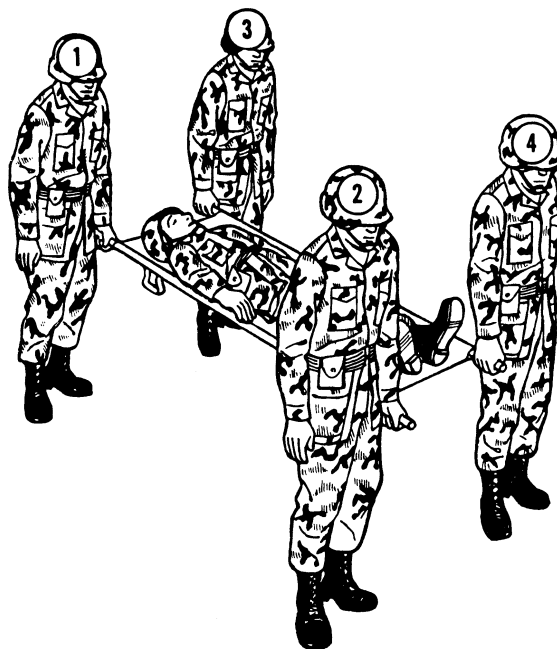


Figure J-23. Four-man carry for smooth, level terrain.

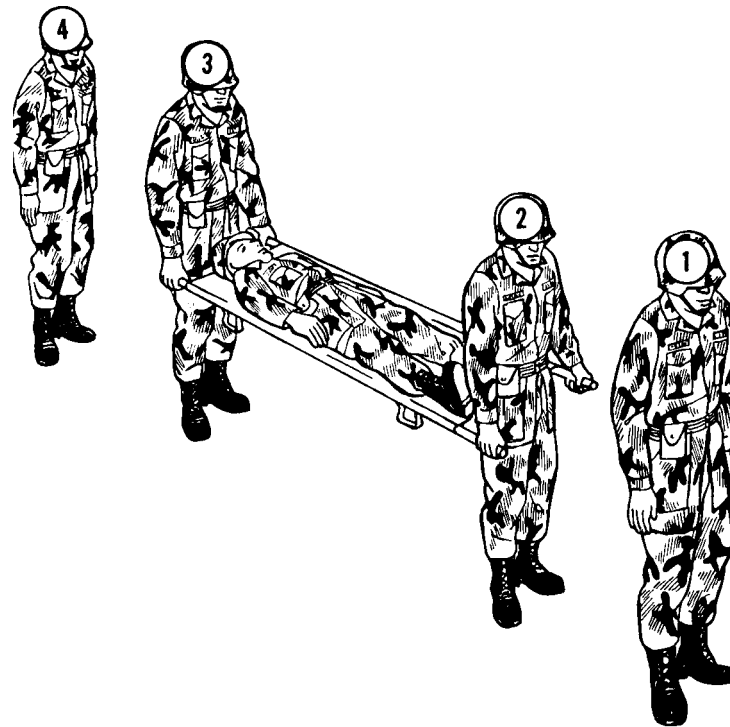


Figure J-24. Two-man carry for narrow trails and passages.

(c) At the command of execution, MOVE, the four bearers proceed through the passage.

(3) The command Litter Post Carry, MOVE, is given to enable the litter squad in a four-man carry to move over rough terrain (Figure J-25).

(a) With the litter squad in position of the four-man carry, the preparatory command, Litter Post Carry, is given. Bearers numbers 2 and 3 step between the handles of the litter and take hold of the handles. Bearers numbers 1 and 4 then release their holds.

(b) Bearers numbers 1 and 4 move to the sides of the litter and grasp the litter poles.

(c) At the command of execution, MOVE, the four bearers proceed carefully over the rough terrain.

(4) Except when the patient has a fracture of a lower extremity, the litter is carried uphill or upstairs with the patient's head forward. Therefore, before proceeding with the uphill carry, the litter must first be turned correctly. From the position of four-man carry (Figure J-23), the litter squad first moves into the position of litter post carry (Figure J-25); then the command Prepare to Rotate, ROTATE (Figure J-26) is given and followed by command, Uphill (Upstairs) Carry, MOVE (Figure J-27).

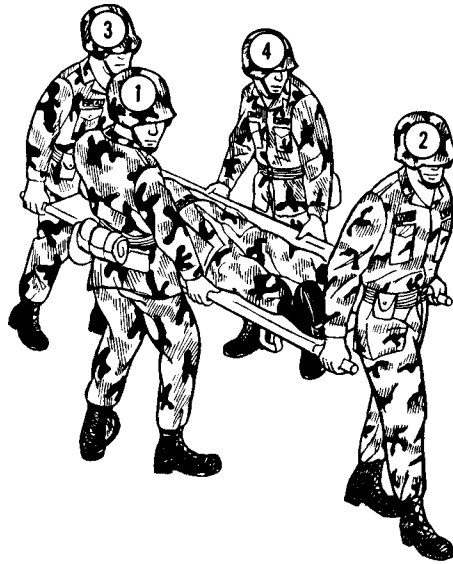


Figure J-25. Litter post carry for rough terrain.

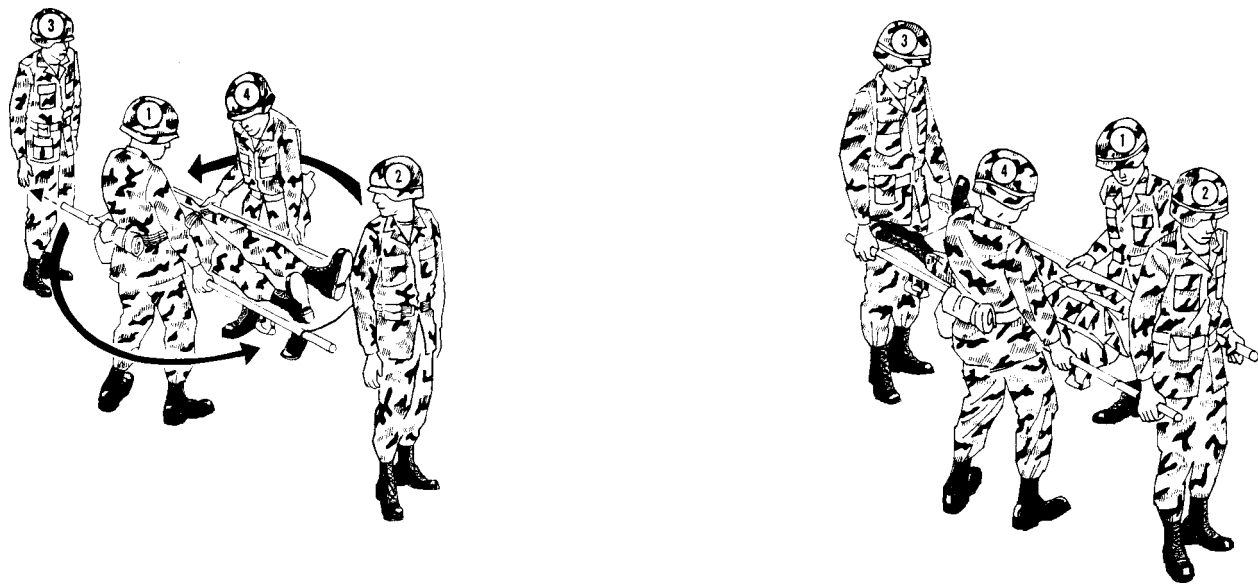


Figure J-26. Rotation of the litter for uphill or upstairs carry and for ambulance loading.

(a) With the litter squad in the position of litter post carry, the preparatory command, Prepare to Rotate, is given. Bearers numbers 2 and 3 release the litter handles and step one pace away, allowing bearers numbers 1 and 4 to support the litter at its sides.

(b) At the command of execution, ROTATE, bearers numbers 1 and 4 move 180 degrees counterclockwise, thus placing the patient's head in the direction of travel with bearer number 1 still on the patient's right side.

(c) As soon as bearers numbers 2 and 3 observe that the rotation has been completed, they resume their positions at the litter handles. The rotation of the litter places bearer number 2 at the patient's head.

(d) After the litter is rotated so that the patient's head is in the direction of travel, the squad halts.

(e) At the preparatory command, Uphill (Upstairs) Carry, bearer number 4 moves to the foot of the litter and takes hold of the litter handle released by bearer number 3. Bearer number 1 moves in front of the squad.

(f) At the command of execution, MOVE, the squad proceeds uphill (upstairs) with bearer number 1 preceding the squad. Bearers numbers 3 and 4 keep the litter level.

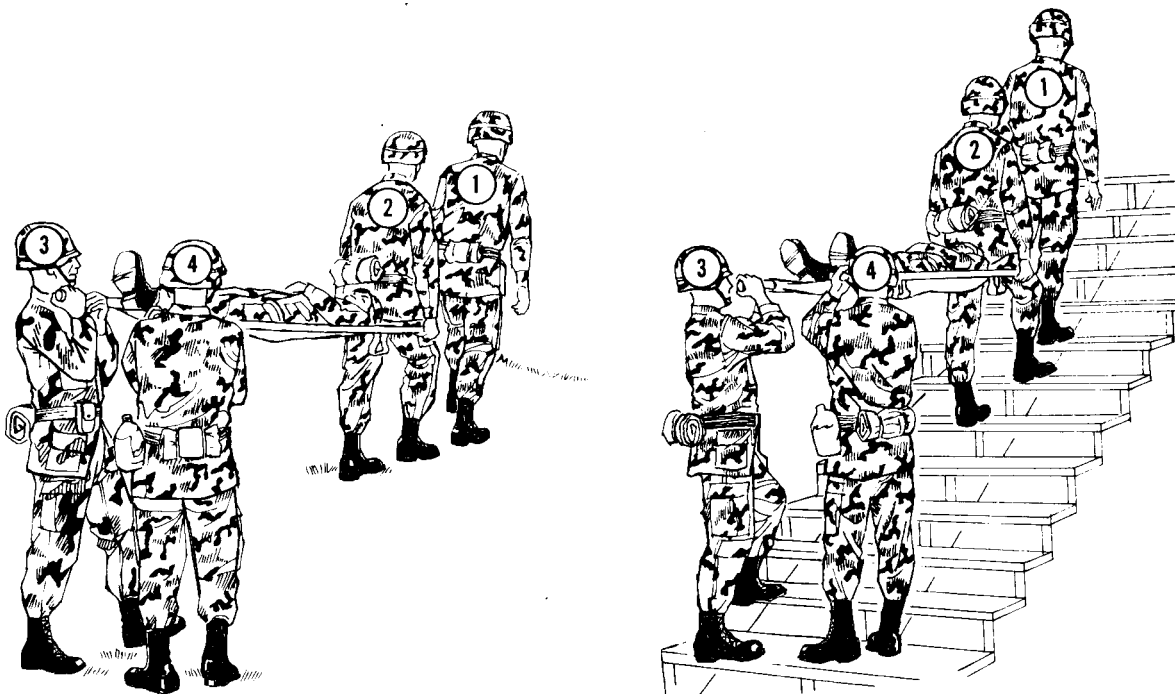


Figure J-27. Uphill and upstairs carry.

(5) Except when the patient has a fracture of a lower extremity, the litter should be carried downhill or downstairs with the patient's feet forward. The command Downhill (Downstairs) Carry, MOVE (Figure J-28) is given when the litter squad is in the position of four-man carry (Figure J-23) or in the position of litter post carry (Figure J-25) provided it has been used to rotate the loaded litter or to move it over rough terrain just prior to carrying it downhill (downstairs).

(a) With the litter squad in the position of the four-man carry, the preparatory command, Downhill (Downstairs) Carry, is given. Bearer number 3 takes the full support of the litter at the patient's head, and bearers numbers 2 and 4 remain in their positions at the patient's feet.

(b) Bearer number 1 moves to the front, facing the squad. He supports bearers numbers 2 and 4 and ensures that they keep the litter level as they move downhill (downstairs).

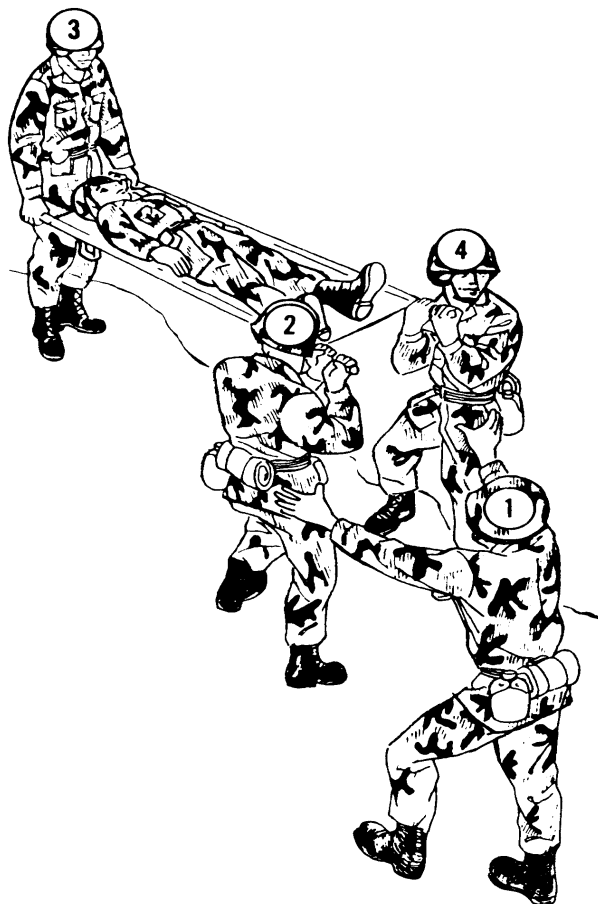


Figure J-28. Downhill or downstairs carry.

c. To Lower Loaded Litter. Before lowering the litter to the ground, the bearers resume the position of four-man carry. At the preparatory command Lower, LITTER, each bearer slowly kneels on the knee closer to the litter and gently places the litter on the ground. The squad then stands without command. For balance and support when lowering the litter, each bearer places his free hand on his other knee which remains in an upright position.

J-8. Procedures for Surmounting Obstacles

In litter transportation, bearers must be able to surmount various artificial and natural obstacles such as fences, high walls, deep trenches, wide streams, and stairwells with small landings. Specific commands for surmounting these obstacles are neither necessary nor feasible, as they must be given in conjunction with the commands for the appropriate litter carry. Common sense must also be used in adapting specific procedures to individual situations.

a. Litter Obstacle Course. A litter obstacle course is a useful training tool for surmounting obstacles and for the physical conditioning of bearers. An obstacle course can be constructed to simulate most types of natural and artificial obstructions that litter bearers are likely to meet. Where construction of such a course is impracticable, many obstacles can be simulated from existing facilities.

b. Methods for Surmounting Obstacles. A number of methods, as well as modifications in litter carries, which enable the litter squad to surmount various obstacles, are discussed below.

(1) Surmounting a fence or low wall.

(a) With the litter squad in the position of Litter Post, CARRY, bearer number 2 releases his grasp of the front handles at the patient's feet and crosses the obstacle, maintaining a low silhouette. Bearers numbers 1, 3, and 4 then advance the litter until bearer number 2 can resume his grip of the front handles (Figure J-29).

(b) The litter is rested on the obstacle with the stirrups placed on the side of the obstacles in the direction of travel. Bearers numbers 2 and 3 support the litter by the front and rear handles, respectively, while bearers numbers 1 and 4 cross the obstacle maintaining a low silhouette. Having passed the obstacle, bearers number 1 and 4 grasp the litter poles near the rear handles held by bearer number 3. Bearer number 3 then releases his hold of the rear handles and crosses the obstacle, maintaining a low silhouette. Bearer number 3 resumes his grasp on the rear handles and bearers numbers 1 and 4 adjust the position of their holds (Figure J-30).

NOTE

The litter should be lifted and not dragged across the top of the obstacle.

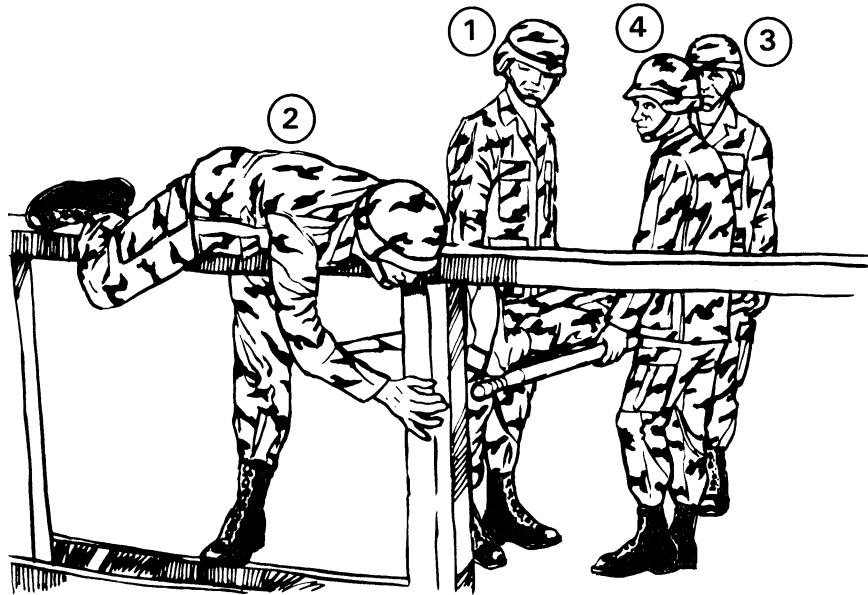


Figure J-29. Surmounting a fence or low wall (step one).

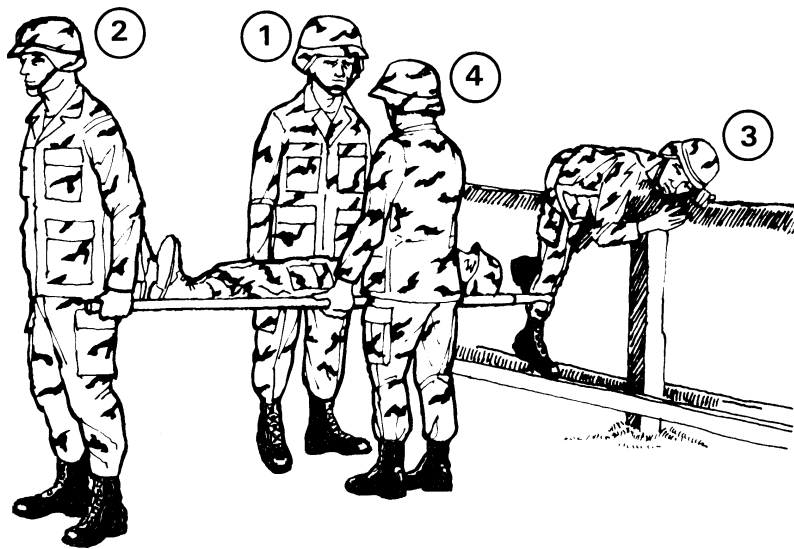


Figure J-30. Surmounting a fence or low wall (step two).

(2) *Surmounting a high wall.* With the litter squad in the position of the four-man carry, the bearers turn and face each other. Together they raise the litter approximately chest high, step close to the litter, letting their bent elbows touch their chests. The front bearers place the front stirrups beyond the wall, scale the wall and drop to the other side. All four bearers move the litter forward until the rear stirrups are against the wall, taking care to avoid scraping the patient's back. The rear bearers then scale the wall and drop to the other side and lift their end of the litter off the wall (Figure J-31). The bearers then resume the four-man carry.

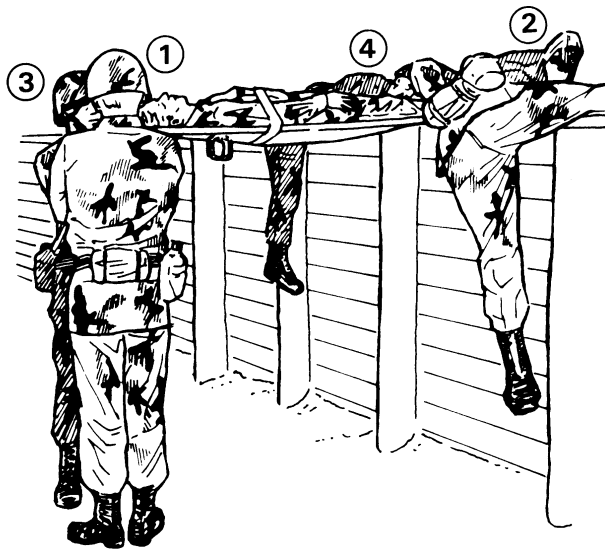


Figure J-31. *Surmounting a high wall.*

(3) *Fording streams and crossing deep trenches.*

(a) With the litter squad in position for the four-man carry, the bearers turn and face each other, determining who is the taller of the two at each end of the litter. Together they raise the litter over their heads, keeping it level. If they are in a trench, they lift the litter above the top of the trench (Figure J-32).

(b) The taller bearer at each end of the litter moves between the handles, facing in the direction of travel and grasps the handles as close to the canvas as possible. The shorter bearer at each end moves under the litter, facing in the direction of travel and grasps the stirrups, which compensate for the differences in height. If all bearers are of equal height, the bearers under the litter grasp the litter poles to the side of the stirrups nearer the ends (Figure J-33).

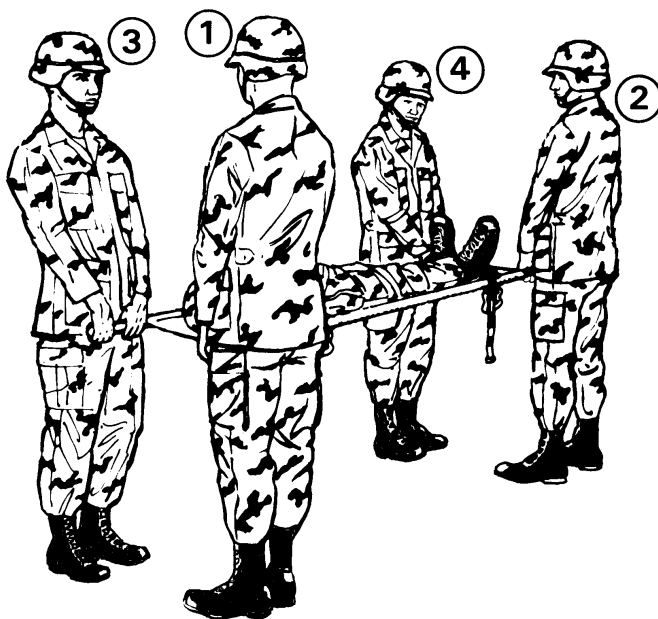


Figure J-32. Fording streams and crossing deep trenches (overhead carry, step one).

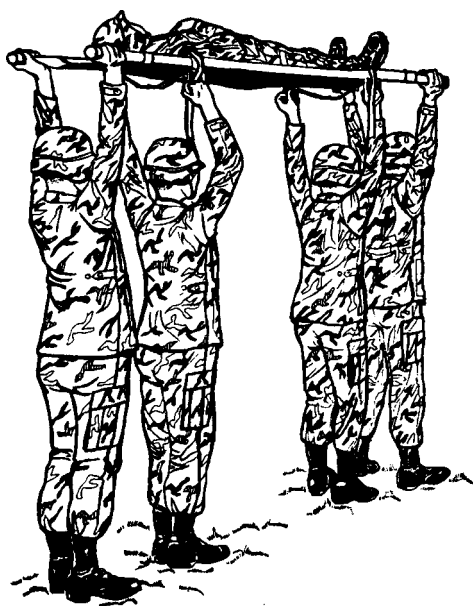


Figure J-33. Fording streams and crossing deep trenches (overhead carry, step two).

NOTE

Should the front bearer step into a hole as they proceed across the stream and release his hold, the other three bearers could keep the litter in position.

(4) *Carrying a litter patient up a stairwell with small landings.* The steps for this procedure (Figure J-34) are—

(a) The litter squad proceeds upstairs to the landing with bearers numbers 1 and 3 supporting the head of the litter and bearers numbers 2 and 4 supporting the foot of the litter.

(b) Upon arrival at the landing, bearer number 3 turns facing the head of the litter and supports it while bearer number 1 proceeds several steps up the next flight of stairs. Bearers numbers 2 and 4 raise the foot of the litter until bearer number 1 can grasp the handle released by bearer number 2. Bearer number 2 then moves to the side of the litter.

(c) With bearer number 2 helping bearer number 1 to support the litter, bearer number 1 grasps the handle released by bearer number 4.

(d) Bearer number 4 continues to help support the litter on the side as he moves up the stairs.

(e) Bearer number 4 assists bearer number 3 in carrying the head of the litter while bearer number 2 advances and assists bearer number 1 in carrying the foot of the litter to the next landing.

(5) *Carrying a litter patient down a stairwell with a small landing.* The steps for this procedure (Figure J-35) are—

(a) The litter squad proceeds down the steps to the first landing with bearers numbers 1 and 3 supporting the head of the litter and bearers numbers 2 and 4 supporting the foot of the litter.

(b) Upon arrival at the first landing, bearer number 4 turns and faces toward the litter and supports the foot of the litter while bearer number 3 supports the head of the litter. Bearers numbers 1 and 2 descend a few steps to the lower flight of stairs and receives the head of the litter from bearer number 3.

(c) Bearer number 3 moves to the foot of the litter to assist bearer number 4 while bearers numbers 1 and 2 support the head of the litter. They then move down the stairs to the next landing.

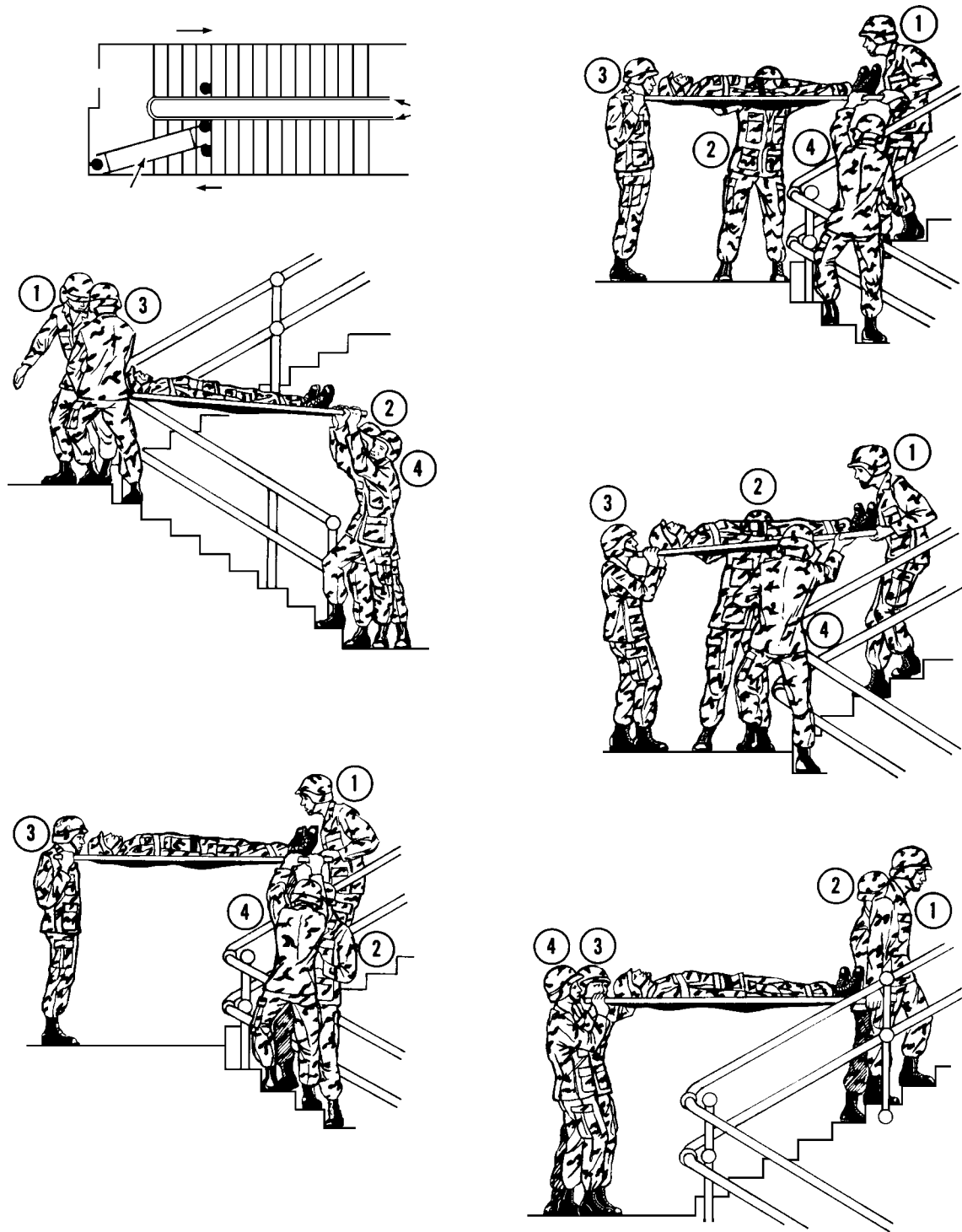


Figure J-34. Carrying a litter patient up a stairwell with small landings.

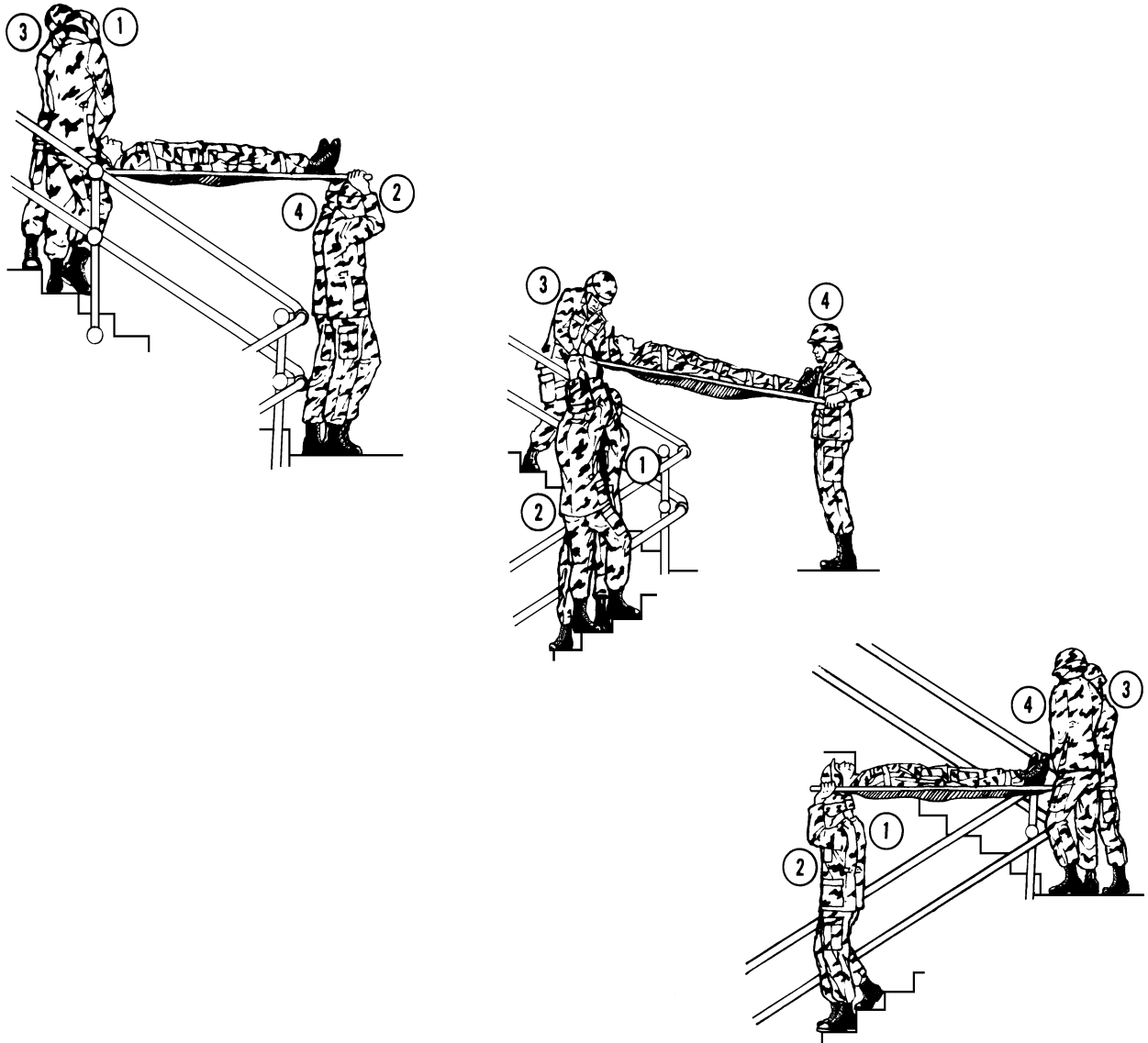


Figure J-35. Carrying a litter patient down a stairwell with small landings.