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FM 21-18

DEPARTMENT OF THE ARMY FIELD MANUAL

FOOT MARCHES

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HEADQUARTERS, DEPARTMENT OF THE ARMY
JULY 1958

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No. 21-18

HEADQUARTERS,
DEPARTMENT OF THE ARMY
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FOOT MARCHES

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*This manual supersedes FM 21-18, 14 July 1950, including C 1, 23 September 1952; and C 2, 9 March 1954.

CHAPTER 1

GENERAL

1. Purpose and Scope

This manual is a guide to the techniques and methods of foot marching, including march discipline, march hygiene, march safety, and march sanitation. The material presented herein is applicable without modification to atomic or non-atomic warfare.

2. Reasons for Foot Marches

Troops march on foot when the tactical situation dictates, when transportation is not available, when the distance is short, or when terrain, weather, or nearness of the enemy prevents the use of vehicles. Troops may use the foot march as part of physical conditioning.

3. Tactical and Administrative Marches

a. Tactical marches are made when enemy contact is imminent and the column must provide for its own security.

b. Administrative marches are made when enemy contact is not imminent or when movement is protected by friendly forces or terrain barriers.

4. A Successful March

A successful march gets troops to their destination at a prescribed time in condition to execute

their combat mission. Factors that influence the success of a march are careful planning and preparation, correct dispositions, adequate march supervision, the men's state of training, esprit de corps, morale, physical condition, and confidence in their leaders.

CHAPTER 2

FACTORS AFFECTING THE MARCH

5. General

a. Tactical success depends largely upon the marching capability of troops. In this atomic era the need for soldiers who can move rapidly by foot remains an important consideration. Our tactical doctrine emphasizes greater dispersion between units as a passive protective measure. Infantrymen must be able to move for short and long distances with weapons, equipment, and ammunition and be ready to fight upon arrival. Inadequate road nets, a desire for secrecy, and many other conditions will necessitate movement by foot. Troops must be conditioned to arduous marches in early training and their proficiency must be maintained and increased.

b. Factors that affect foot marching include—

- (1) Terrain, roads, defiles, desert, and snow.
- (2) The season of the year and weather conditions.
- (3) Equipment carried by troops.
- (4) The physical condition and mental attitude of the troops.

6. Effects of Terrain on Foot Marching

a. Marching over level or slightly rolling terrain in good weather is not difficult. After a period of rain, snow, or ice, however, the route becomes slip-

pery. Footing becomes difficult and the rate of march slows.

b. In arctic climates, deep snow, crevasses, and ice slow the rate of marching troops and may necessitate the use of special equipment such as skis and snowshoes.

c. In desert marching the poor footing, heat, dust, and lack of roads dictate a slower pace.

d. In mountains the problems of marching are increased by poor footing, narrow trails, and steep, slippery slopes.

e. In jungles the dense vegetation, heavy rains, and the lack of roads make foot marching extremely difficult.

f. On streets and highways, marching troops must watch for traffic. Whenever practicable, accompanying vehicles should be placed so as to provide maximum protection for troops against passing or overtaking vehicular traffic.

7. Effects of Climate on Foot Marching

a. Foot marching under adverse climatic conditions follows the same basic principles as marching under normal conditions. The differences lie in the physical limitations imposed by these conditions and in the training and use of special equipment to overcome these conditions.

b. Certain seasons in temperate zones have characteristics common to tropical and arctic climates. Under such conditions the arctic and tropical techniques apply.

c. The constant heat and the high humidity of tropical climates may exhaust troops rapidly.

Proper adjustment of clothing and equipment becomes particularly important because improperly adjusted equipment causes skin irritations, and resulting infections are always possible. Adequate amounts of safe drinking water must be provided. Water discipline is most important (par. 12).

8. Effects of Weather on Foot Marching

a. Extremes of weather in the temperate areas may demand the precautions taken in arctic and tropical regions. As rain and fog, like darkness, decrease visibility, units are closed up to retain control.

b. Dust created by the wind in dry weather causes difficulty in breathing and seeing and slows down the march.

c. Blizzards and extremely high winds in the Arctic may require halts until the visibility and marching conditions improve. Marching in heavy or sticky snow is like marching in mud. Wet snow increases the problem of keeping the feet dry. Packed snow and ice is slippery and tiring to walk on.

d. Frequent rainstorms in tropical climates make the footing poor. Sometimes this prevents foot marching altogether.

e. Extremes of weather increase the likelihood of accidents. Cold weather tends to produce frostbite, falls, and in some cases sunburn or snow blindness. Hot weather tends to produce sunburn, heat stroke, and heat exhaustion.

9. Before the March

Men should be in good physical condition before

going on a march. This is insured by systematic and progressive training (ch. 5). When possible, inform your men of the march at least a full day before it is to begin. It is a good policy during early training to inform them a week in advance. Have them organize and adjust their equipment the night before the march. Serve a hot meal before the march.

10. Loads

a. Heavy loads and improperly adjusted equipment impair marching ability, decreasing the rate and distance that men can march and increasing the frequency of halts. Tightly fitting pack straps restrict the chest and make breathing difficult. Tight belts that ride high on the abdomen also handicap normal breathing and digestion. Teach each man to adjust his uniform and equipment so that he can move and breathe freely without impairing his blood circulation.

b. Loads should not exceed one-third of the individual's weight or 50 pounds. A more practical load is 40 pounds or less. This load includes water, weapons, ammunition, helmet, pack, and other equipment.

11. March Discipline

March discipline is the observance and enforcement of the rules that govern a unit on the march. It is willing teamwork—the result of training. March discipline involves adequate march control, care of equipment, obedience to march instructions, suitable formations and rate of marching, correct distances, and effective use of cover and concealment.

12. Water Discipline

a. Water requirements will vary. On long marches during hot and humid weather you may need as much as three gallons of water a day for drinking and cooking. Drink when you are thirsty if water is plentiful, but drink only enough to quench your thirst. Any restrictions on water below the level necessary for efficiency cause body temperature to rise and result in heat exhaustion. In hot weather, men may lose more than a quart of water per hour as sweat. This water must be replaced to avoid heat disorders and disease. The general belief that men can be trained to adjust to decreased water intake is wrong. Because of the widespread incorrect belief that drinking water while working is harmful, men often do not drink enough water even if it is available. Water must be available and troops must be directed to drink water frequently in very hot weather.

b. A hot, tired stomach does not readily assimilate large amounts of water. Drinking too much water too fast results in cramps and nausea, even though the body needs water at that time. Instead, drink small amounts frequently.

c. Perspiration causes a loss of body salt. Exhaustion results if this salt is not replaced. The amount of salt in your food makes up for losses when water consumption is less than a gallon a day. As you drink more water, you need more salt. When the salt diet is inadequate, salt is best taken in solution by adding it to the drinking water. Suitable solutions are—

(1) One pound of salt per 100 gallons of water.

- (2) Three-tenths pound of salt per Lyster bag (36 gallons water).
- (3) One-fourth teaspoonful of table salt or two 10-grain plain salt tablets per canteen of water.

d. Take water with salt tablets to avoid any possibility of nausea.

e. Do not drink water that has not been approved by a medical officer or treated with water purification tablets or by boiling. Refill canteens only during halts and only at approved water supply points.

f. Individual water purification tablets are especially suited for treating water in canteens. Follow directions for use carefully.

g. Heat casualties and fatal heat stroke occur most often as a result of overage, overweight, present or recent illness, lack of acclimatization to heat, and deficient fluid and salt intake.

13. Self-Confidence

Some men doubt their ability to complete a march. Since marching is a military necessity, build up the self-confidence of these men by strong leadership and progressive training. As their muscles harden and marching techniques are learned, their self-confidence increases and they take pride in their marching ability. Stimulate this pride; build a unit spirit in each man and a determination not to let his unit down. Explain the where, how, and why of the march without minimizing or exaggerating any expected difficulties. State the specific training purpose of each march. If the march is by roads, ex-

plain why transportation is not available or that it is much safer to march on foot under the tactical situation. In this way you keep the men informed and retain their confidence. A well-conducted march is a medium for developing and demonstrating the many indefinable attributes of a good soldier, a good leader, and a good unit.

14. Morale

Any loss of morale reduces marching efficiency. Low morale is contagious and magnifies any discomfort soldiers may have. You can avoid low morale on a march in many ways. For example—

a. Don't have your men fall in too far in advance of the actual starting time. Form your unit just before the start of the march.

b. Avoid delays that keep the men standing. These delays increase fatigue by restricting their movement and by preventing them from easing the weight of their equipment. Long delays cause men to cool off and stiffen, making it more difficult for them to resume the march.

c. Prescribe the uniform and equipment to be carried and check to see that the equipment is as prescribed and the uniform is properly fitted. Marching is normally at route step with arms slung. Control the march.

d. Do not march your men over difficult routes when either shorter or better routes are available, except for specific training purposes. Make a route reconnaissance to get information of conditions that might cause delays. Eliminate or reduce these delays by planning. Reduce any delays that could not

be foreseen before the march by prompt decision and action on the march.

e. Do not move your men by foot when they can be moved by motor, except for specific training purposes and when the tactical situation dictates movement by foot. When enough transportation is not available to move all in one trip, shuttle.

f. Hold passing vehicles to a reasonable speed to promote safety and prevent dust, rocks, or mud from being thrown on the men. When dust is particularly offensive, move troops to the upwind side of the road.

g. Do not permit straggling. Straggling is caused by poor discipline, poor physical condition of the men, overloaded men, or by men who are about to become march casualties as the result of fatigue, blisters, or sickness. Straggling lowers morale and reduces the unit's strength and ability to accomplish its mission at the end of the march. Straggling is infectious. After one man falls out, others feel less compelled to continue the march. On long, hard marches many soldiers have a tendency to straggle. It is here that leadership is plainly exhibited. The leader who can cheer up his men, keep up the march rate, prevent straggling, and maintain the appearance of strength, firmness, and cheerfulness commands the greatest respect in his men. The leader must maintain discipline, complete each march, and see that each man properly cares for himself and his equipment. Watch for conditions that cause straggling. When it is a matter of discipline, be firm. Require each soldier to continue to march in his correct place in the column. Provide a small guard

unit to march at the rear of the column to help control straggling.

- (1) When straggling is caused by the poor physical condition of an individual, such as one with a swollen knee, give him written permission to fall out. When the injury is permanent or will probably occur on all future marches, take steps to have the man reassigned. When straggling is caused by overloading, such as men carry-crew-served weapons, shift the load from man to man at frequent intervals. If it is caused by men who are about to become march casualties, require them to fall out and examine them. When you feel that a man will become a march casualty in a short while, give him written permission to fall out. If he appears to be shirking have him continue the march.
- (2) Keep the unit together. Entire units may tend to straggle when the rate is too fast, they need rest, or footing is bad.
- (3) Encourage diversions that take the men's minds off of the march; for example, marching at attention for short periods, counting cadence, singing, conversation, or humor in almost any form. Show your men how to march by participating in the march with normal loads.

h. The speed of the march has an important bearing on morale. If the march is too rapid it will tire the troops rapidly; if it is too slow it tires the individual's patience and induces fatigue.

CHAPTER 3

TECHNIQUES OF MARCHING

Section I. GENERAL TECHNIQUES

15. March Formation

The normal formation for marches is a column of twos, one file on each side of the road; but troops can march in a column of files, twos, threes, or fours, depending on the circumstances and the route. The commander designates the side of the road on which the troops march. See figure 1 for an example of a correct tactical march formation.

16. Organization of March

a. Units normally march in their tactical groupings, the battle group constituting one serial and the companies march units. When the company commander cannot effectively control his company, as in mountains, cross-country, or jungles, the platoon may be a march unit. A column is formed by the successive arrival and passing of its elements at the start point (IP) (fig. 2). The IP is an easily recognized point on the route of march, forward of all units.

b. When the column approaches its destination it is met at the release point (RP) by guides who lead the units to their assigned areas. An RP (fig. 3) is an easily recognizable place on the route of



Figure 1. Correct tactical march formation.

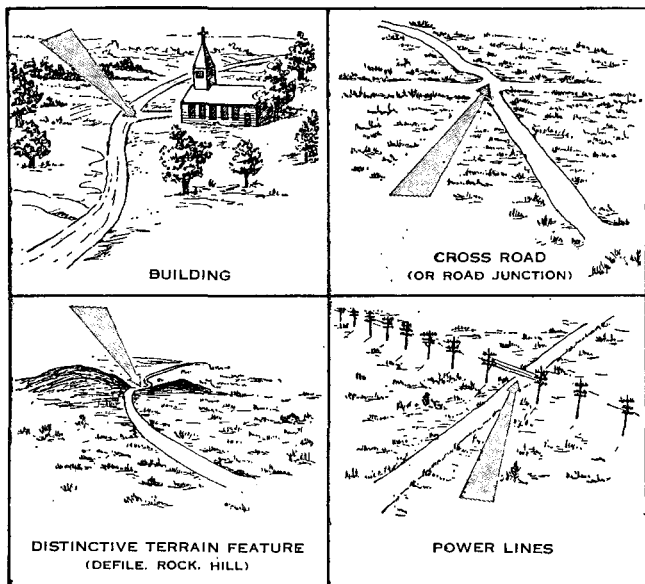


Figure 2. The initial point is an easily recognizable point in the route of march, at which a column is formed by the successive arrival and passing of its elements.

march at or before the point where the column breaks down into its units for movement into their assigned areas.

17. Rate of March

In determining the rate of march, consider the tactical situation, size of your unit, terrain, individual loads, weather, length of march, and the condition of the troops. Your SOP usually gives the rate of march (app. II), but the column commander may modify this rate as the situation requires. He con-

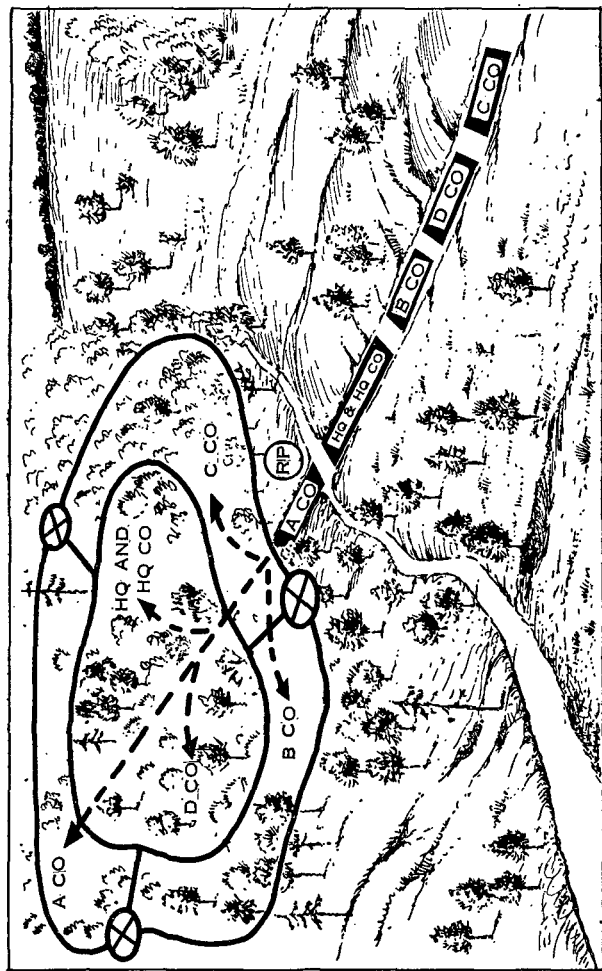


Figure 3. The release point is where the column breaks down for movement into bivouac or assembly areas.

siders the factors that affect the march and then selects the rate that will place his unit at its destination in the shortest time and in the best condition to accomplish its mission.

18. Pace Setter

The pace setter, usually a noncommissioned officer, marches 4 to 10 yards ahead of his unit and maintains the specified rate of march (fig. 4). A pace setter knows his pace (length of step). By knowing his pace and using his watch, he sets the correct cadence (steps per minute) to maintain the rate for a particular march. Select a man of medium height to act as pace setter, because a tall man usually covers too much ground with each step and a short man covers too little. Continuous overstriding, or too long a pace, can result in needless injury, particularly to the leg muscles and the tendon sheaths. The officer marching at the head of the column supervises the pace setter to make sure he keeps a uniform cadence.

19. Pace and Cadence

a. The normal pace is 30 inches. A *pace* of 30 inches and a *cadence* of 106 steps per minute result in a *speed* of 3 miles per hour and a *rate* of $2\frac{1}{2}$ miles per hour if a 10-minute rest period is included. Since the pace of each man may vary, the cadence will not be the same for all men at the prescribed rate of march.

b. The ground slope and footing dictate the pace. The cadence remains the same. Decrease the length of step when marching uphill or when marching on steep downhill slopes. The step will lengthen and



Figure 4. The pace setter maintains the rate of march.

shorten and thus automatically adjust the accordion effect. Distances between units open and close during the operation but remain the same between men. On moderate or gentle downhill slopes, hold a normal cadence and pace. When footing is muddy, slippery, or rough, a prescribed cadence is not practicable.

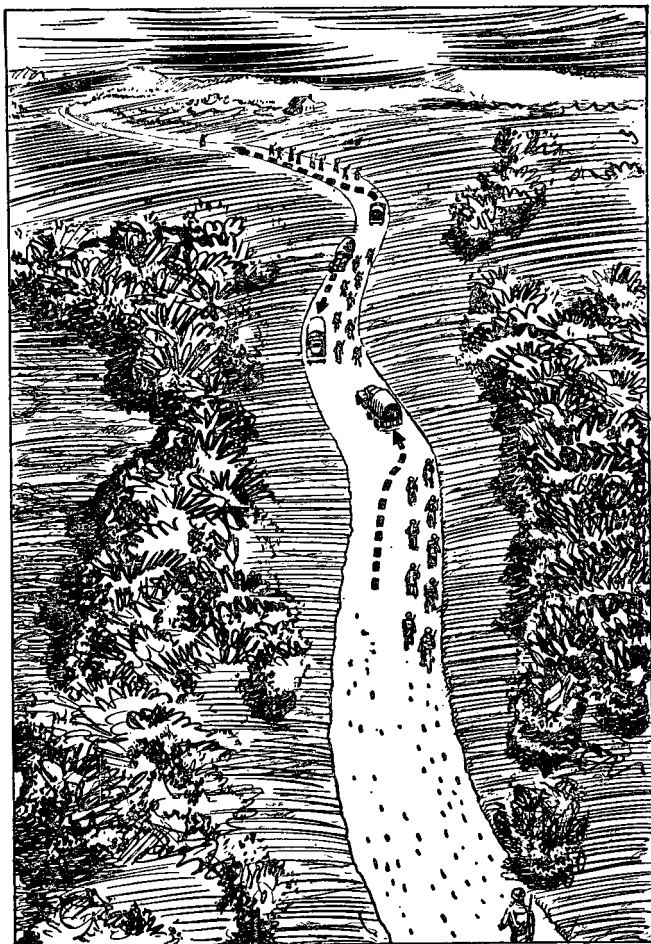


Figure 5. Allow space for passing vehicles in column formation on the road.

20. Distances Between Men

The march commander fixes the distances between men. This is usually covered in the unit SOP (app. II). See paragraph 40.

21. Distances Between Units

Use the distances between units to help reduce accordion action (par. 22) and increase march efficiency and safety. The commander ordering the march prescribes these distances, allowing enough distance between the units to permit vehicles to pass the column (fig. 5). See paragraph 39 for suitable distances for administrative marches.

22. Accordion Action

a. Maintain a steady march rate to limit accordion action in column movement. When the rate is increased or decreased, do it gradually and at the same time warn the column that the rate is being changed. Take up the slack by allowing the length of the march units to expand or contract a reasonable distance.

b. The men keep their relative distance within a unit by alertness and by gradual change of rate. Any sudden change of rate increases as it passes down the column, so that the last few men must double time or be left behind. Minor changes at the head of a column become major changes at the tail of the column. The tail of the column is the most difficult marching position. Rearrange the order of march periodically so that the same men or units do not always march at the tail of the column.

Good march discipline over normal roads should make marching at the rear the same as at the front.

23. Halts

a. Make halts at regular intervals so that the men can rest, adjust equipment, and relieve themselves. Under normal conditions make a 15-minute halt after the first 45 minutes of marching. After the first halt, make a 10-minute halt after each 50 minutes of marching.

b. Make changes in the time schedule or place for the regular halts when passing through crowded areas or when needed to obtain cover or concealment. Do not halt in congested communities where individual relief is difficult. Select a more appropriate area (fig. 6). Avoid halts on forward slopes which are subject to observation and long range fires. Halt in woods to provide concealment.

c. Stop and start all units of a column at the same time. This is done by the use of synchronized watches under platoon control. At the halt signal, have the troops fall out to the sides of the road. Leave the road clear during the halt. Keep your men in the immediate vicinity of their unit, and have them loosen their packs and relax. To improve blood circulation and to keep their feet from swelling, encourage the men to elevate their feet and legs by placing them on rocks, banks, or logs. Adjust shoe laces and pack straps after a few hours of marching.

d. Leaders inspect their men and equipment during halts and trained medical personnel administer emergency treatment.

e. Dispose of feces in small individual pits and cover immediately. Dig straddle trenches during noon halts and in temporary bivouacs.



Figure 6. Halt outside of towns.

24. Length of the March.

a. Do not march more than 8 hours at the normal rate during any one day. Battle groups or smaller units can cover 15 to 20 miles a day by normal marches under favorable conditions. For a fast march, a rate

of 4 to 5 miles per hour may be maintained for short distances.

b. A forced march requires more than the normal effort in speed, exertion, hours marched, or a combination of these. Although forced marches impair the fighting efficiency of a unit, urgent conditions may require them. Full advantage should be taken of those periods when the troops are most rested to increase the rate of march.

Section II. SPECIFIC TECHNIQUES

25. Care of Sick and Injured

a. Do not let your men fall out during the march or leave the immediate vicinity of their unit during halts *except* with the specific permission of an officer. Examine the men who fall out. Give them a written note to the surgeon, or have them continue the march (fig. 7).

b. Trained medical personnel march at the tail of the column to examine the men authorized to wait for them. They may admit them to the medical vehicle or authorize them to place their arms and equipment (all or part) on transportation provided for the purpose. They treat cases of minor illness or injury and see that these men rejoin their units at the first opportunity (fig. 8).

26. Marching on Roads

Hard-surfaced roads offer little or no hindrance to normal marching, but vehicular traffic over them frequently dictates that troops march beside the smooth surface. March on the shoulder of the road



Figure 7. Give a written note to march casualties you leave behind.

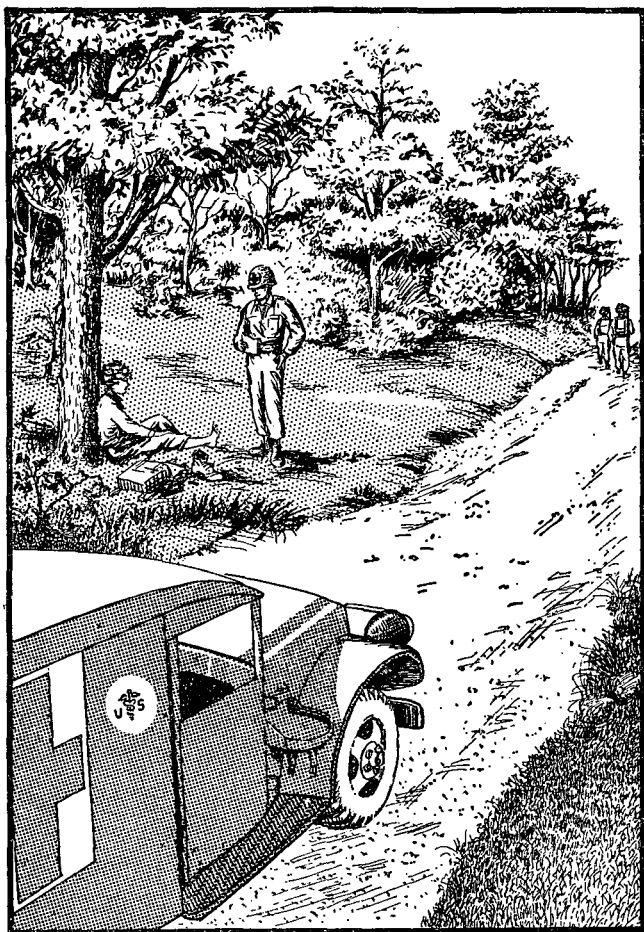


Figure 8. Medical personnel collect march casualties along the route.

when the weather is good and the road shoulders are wide enough. Steps are then cushioned by the softer footing. Vehicular traffic on unimproved roads is a constant interference to the foot column because the road shoulders are seldom wide enough for marching. Rain turns the footing into mud, and dry weather increases dust. The footing may be initially good, but after a number of men and vehicles travel over the route, it may break down. If this occurs, increase the distances between men so they can select the best footing. When troops are required repeatedly to cross roads or travel on them, the situation may warrant that warning signs to alert traffic be placed sufficiently in advance. Use of such signs should be coordinated with the military police, or with the civil police if they have jurisdiction.

27. Marching Cross-Country

a. A cross-country march is generally used to move troops into action. More supervision is required in cross-country marching because there is less schedule control, limited personal control, more obstacles, and unforeseen difficulties. A cross-country march is usually slow, and the formation depends on the specific circumstances. Increased distances between men and units extend the column and make control more difficult, but the increase permits each man to select the best footing. To aid control, make full use of communication.

b. Accordion action (par. 22) may become a serious problem while marching cross-country, tiring the troops and decreasing control. Typical

causes of this action are lack of level terrain, the increased load carried by the troops, and obstacles. When the situation permits, defiles and prominent landmarks are bypassed, since they are normally interdicted by artillery fire. Should the situation require the crossing of a defile, each unit commander calls a brief close-up halt on the far side of each defile (fig. 9).

28. Marching at Night

a. Night marches afford concealment from air and ground observation, reasonable security from air attack, and avoid the excessive heat of day marching. Make a detailed daylight reconnaissance of the route and march objective before a night march. When this is not possible, make a map reconnaissance. Take special precautions to maintain direction and contact within the column; use guides and connecting files. Make route sketches that show the route, prominent landmarks near the road that can be easily recognized at night, road junctions and crossroads and any features that distinguish them, and distances from the IP to the most important features.

b. Mark the route when the situation permits reconnaissance. Place guides or luminous markers at road junctions and crossroads to indicate the correct route. When you cannot mark the route beforehand, have the guides accompany the leading element, and post the guides where needed to point out the correct route for the units that follow. Make provisions to pick up guides and markers when the column has cleared.

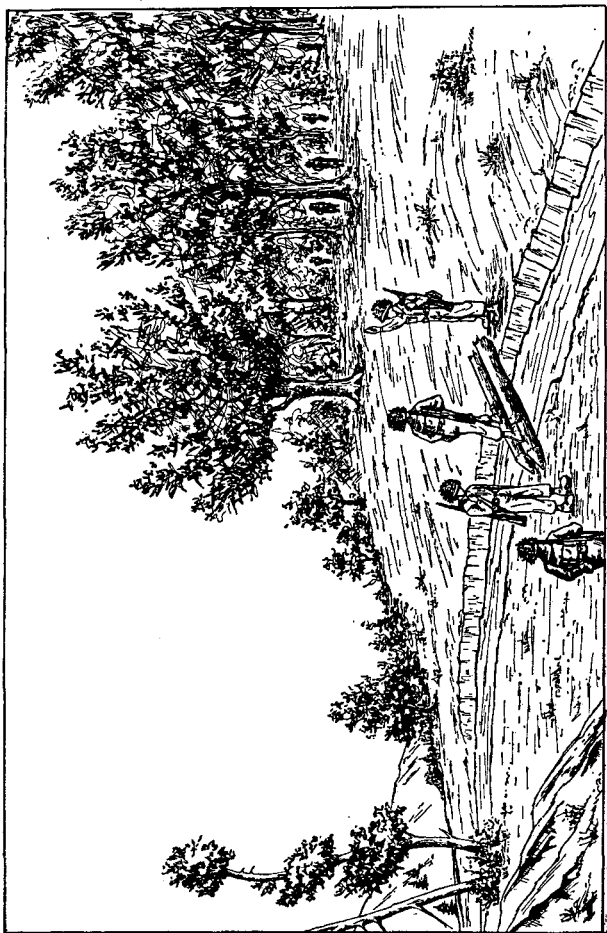


Figure 9. Halt the column to let troops close up after crossing a defile.

c. To maintain direction, use friendly civilian guides or guides from other units who are familiar with the route. Preferably, follow a well-defined route even if it is much longer. Make frequent checks of the route and make full use of communication facilities.

d. Use the same formations at night that you use for day, but keep contact by reducing the distances between men and units. Send enough connecting files forward to keep contact with the unit to your front.

e. When marching troops must cross roads or travel on them at night, the situation may warrant that warning signs of light-reflecting material be placed sufficiently in advance and to the rear of the column to alert traffic. When the tactical situation permits, flashlights or lanterns add to the safety of marching troops. Whenever practical, a truck or other vehicle should follow the last unit to provide protection from overtaking vehicular traffic.

29. Administrative March

An administrative march is conducted when contact with the enemy is remote and when there are no security or secrecy requirements beyond that necessitated by enemy aircraft or long range weapons. When the danger of enemy air attack is present, provide security in the form of air guards. An infantry company normally marches in five platoon-size units.

a. During daylight, march your column with a 2- to 5-yard interval between men. An interval of less than 2 yards causes a man to cut down his step

to keep from stepping on the heels of the man in front. An interval of more than 5 yards between men causes excessive length in the column and consequent lack of control.

b. During darkness, march your column with an interval of 2 to 3 yards between men. March at a slower rate so that the men and units do not lose contact. March at a rate of 2 miles an hour on roads and 1 mile an hour cross-country. Suitable intervals are 50 yards between companies, 25 yards between platoons. Use connecting files to keep contact between units. Send connecting files out from your unit to the next unit ahead. When the distance between your unit and the one ahead increases, send out more connecting files. Never lose contact. When the distance between your unit and the one ahead decreases, withdraw unnecessary connecting files. If the unit ahead makes an unscheduled halt, halt your unit and go forward to investigate. The delay may be caused by making contact with unidentified personnel or doubt as to the correct route. After determining the situation, take steps to resume the march. Close any lost distance gradually so as not to cause gaps in units to your rear. Rough terrain demands frequent halts to let the men close up.

30. Formations for Tactical Marches

Make a tactical march when contact with the enemy is possible or when the unit is to occupy a combat position at the end of the march. The tactical situation dictates the road movement order. Vehicles are often dispersed throughout the foot column. When this is done, the march commander

insures a safe distance between vehicles and troop units. At night, under blackout conditions, rear elements of troop units marching ahead of each vehicle are alerted to warn the vehicle operator in the event the column is suddenly halted.

a. During daylight, allow enough interval between men to provide dispersion against hostile small arms or artillery fire. Allow enough interval between units to permit easy deployment and to prevent the entire column from being surprised by enemy fire. Usually a 5-yard distance between men or the interval prescribed for administrative marches is enough.

b. During darkness, caution your men to keep silent to preserve secrecy. Strict control of fire and lights must be maintained to prevent detection. The glow of a cigarette is visible for a great distance at night. Keep the column closed up. Post guides at any point where the column might take the wrong route. After halts, see that the men move out promptly and all equipment is present. A column of twos is usually the most practical formation; however, use a column of files across rough terrain. Control is difficult at night and full use must be made of connecting files, messengers, and other authorized communication means.

31. The Company Commander's Job on the March

Upon receiving a warning order (par. 64), the company commander immediately informs his company of all known data applicable to the march. He orders the platoon leaders to prepare their squads for the march. Upon receipt of the road movement order (par. 66), the company commander supervises the platoon leaders while they check their men

for physical defects. He issues instructions as to what equipment will be carried.

a. When the company is marching alone, the company commander selects the route, sends out a route reconnaissance party, and issues a road movement order. When the company marches as a part of a larger unit, he issues a road movement order and supervises the preparation of his company for the march. All men whose physical condition indicates that they are likely to become march casualties should be left behind or transported by vehicles to the new area. Before the march, the squad leaders inspect the men's physical condition and their equipment for completeness, condition, and proper loading. The platoon leaders and the company commander supervise the squad leaders.

b. The company commander reconnoiters the route to the IP and determines how long it will take his company to arrive there from its present area. In this way he can judge the time to form his company to prevent delay and to keep the men from standing for unnecessary periods in the company area or at the IP. He usually marches at the head of the company to the IP. He checks the company formation, intervals, and loading of equipment as it passes the IP. Then he falls in at the rear of the company or at the place in the column where he can exercise the most supervision. He keeps control (usually by voice commands), prevents straggling, and checks the prescribed march rate.

c. At the first halt, the company commander normally walks from the rear to the front of his company, supervising foot inspections, water dis-

cipline, sanitation, safety, and adjustment of loads. When the company resumes the march, he remains in place to inspect the men and loads as they pass and to check the prescribed intervals. He then joins the company column. He maintains control and checks all men who fall out to see that they have written permission from their platoon leaders to do so.

d. At succeeding halts, he supervises foot inspections and inspects men whose conditions threaten to cause them to become march casualties. Prompt action on his part may relieve the conditions which cause blisters or other ailments. In serious cases, the individual is permitted to fall out for proper treatment. Toward the end of the march, the company commander moves to the front of the company to lead it into the assembly area. He allows no delay in marching off the road. After dispersing the platoons in their areas, he sees that the men are rested and fed, and safeguarded against fire and other hazards, and insures that the men take care of their feet and equipment.

32. The Platoon Leader's Job on the March

Upon receipt of a warning order, the platoon leader supervises the squad leaders while they check their men for physical defects. When the road movement order is issued, he informs his platoon of the time and duration of the march, formation, intervals, rate, halts, and equipment to be carried. He supervises the squad leaders as they make foot inspections and check the equipment. He discusses with his platoon such details as water discipline,

straggling, changing of socks during the march, and treatment of blisters and foot abrasions. When the march is to be made over terrain like mountains or jungles, he discusses the special factors involved. When hazards exist such as toxic plants, poisonous insects or reptiles, extremes of heat or cold, conditions ideal for forest fires, traffic, etc., he alerts the platoon to such hazards and points out safeguards against them.

a. Before the march, the platoon leader inspects the packs and other equipment carried by the men to see that straps are properly adjusted and that the load is carried as high as possible for comfort.

b. As the platoon marches from the company area to the IP, the platoon leader keeps the correct distance behind the platoon ahead and has his men take the prescribed formation and intervals between men. He normally falls in at the tail of the platoon and marches there until near the end of the march. He then moves to the head of his unit to lead it into the bivouac area.

c. During the march the platoon leader prevents straggling and maintains the prescribed rate. At halts he sees that his men move off the road and get off their feet so that they will get as much rest as possible. One minute before resuming the march he forms his platoon on the road to prevent delaying the column. When a member of the platoon becomes a march casualty, he personally inspects him. When the casualty is bona fide, he gives the man written permission to remain in place and receive medical attention. When the man appears

to be shirking, the platoon leader requires him to continue the march.

d. At the end of the march, he supervises the squad leaders while they make a foot inspection. He sees that prompt medical treatment is obtained when needed. The men check equipment and are then allowed to get as much rest as possible. The platoon leader assists in this by dispersing his platoon under cover in its area as soon as it halts.

33. The Squad Leader's Job on the March

Upon receiving the warning order, the squad leader inspects his men for physical defects. If any man is injured or too sick to make the march, the squad leader reports this information to his platoon leader.

a. After the platoon leader gives the road movement order, the squad leader tells his squad what uniform is to be worn and what equipment to carry. He shows the men how they are to assemble their packs and carry their equipment. He inspects each man's boots to see that they have been broken in and are serviceable. He inspects each man's socks to see that they fit and that they have no holes or mended sections that could cause blisters. He has each man carry on extra pair of socks. The squad leader or his assistant should carry a can of foot powder, gauze, adhesive tape, and salt tablets. It is the squad leader's responsibility to see that all men have *full canteens of water* and proper equipment.

b. The squad leader marches at the head of his squad. He keeps the proper distance from the man ahead of him and checks his men to see that they keep

their prescribed intervals. At halts he adjusts equipment and, if necessary, shifts crew-served weapons and heavy loads from tired men to others. He also inspects the men's feet for blisters and abrasions. On long marches he sees that his men change socks after 3 or 4 hours of marching.

c. On arriving in the bivouac area, he disperses his men under cover. He inspects the men's feet and individual and squad equipment and reports to the platoon leader.

34. March Control

Use radios, foot or motor messengers, light aircraft, visual signals, and voice to control the march. When the tactical situation demands radio silence, use voice, messenger, or arm and hand signals.

a. A short, compact column is easier to control than one that is scattered. Weigh carefully the value of dispersion against the value of control before deciding on the march formation. For example, on a night march in an area interdicted by enemy artillery fire, to disperse the column with large intervals between units and individuals will result in a long column, making control difficult. This could cause temporary loss of some units en route or failure to assemble in the correct area on time. On the other hand, if a compact column is caught by surprise fire, heavy casualties result.

b. Issue a road movement order stating distances to certain points along the route and times of halts. These factors assist in march control. March at a uniform rate with prescribed intervals between units and individuals. Keep up this rate throughout the

march unless unforeseen obstacles arise. Prevent straggling and keep the company marching as a unit regardless of the obstacles.

c. When marching on the right hand side of the road and approaching a crossroads heavy with traffic where the company is to turn left, the company commander orders each platoon to cross to the left of the road by executing a left flank movement on the platoon leader's order. The platoon leader orders a right flank movement as the platoon reaches the left of the road. The platoon then turns to the left at the crossroads, staying on the left side of the road. When the tail of the platoon clears the crossroads, the platoon leader orders a right flank movement, followed by a left flank movement to return to the marching position on the right side of the road. These movements permit the company to pass crossroads with least interference by traffic. Road guards are posted ahead of and to the rear of each platoon to halt vehicular traffic during the flanking movement.

d. The company commander moves immediately to the front of his column if unscheduled halts occur and continues the march with least delay after overcoming the obstacle. During heavy traffic, he has the men march on the shoulders of the road or as far to the sides as possible to facilitate the traffic flow. The platoon and squad leaders keep the prescribed intervals between men and prevent straggling. They exercise control by voice and arm and hand signals. Singing and talking on the march is encouraged unless secrecy is to be preserved.

e. The platoon leaders and higher commanders carry strip maps of the route. The maps help in regulating the march rate because they show prominent terrain features and their distances from the IP. Distances between units are permitted to vary to offset the changes of rate within the column. For example, when the head of the marching column is slowed by a poor section of the route, the platoons following continue at the specified rate until they, in turn, reach the obstruction, or until the distances between the platoon have been closed. When the the leading platoon and each platoon in turn clear the poor section, they resume the specified rate. Since the rest of the column moves at a slow rate past the obstruction, the distances between platoons are regained.

35. Setting the Pace

Use a pace setter to set the rate of march (par. 18). He should be equipped with a wrist watch bearing a second hand so that he can frequently check his pace. The remainder of the company governs their rate by that of the pace setter, but they do not try to keep in step with him.

36. Setting the March Rate

The rate of march is the average marching speed per hour, including short halts. The rate of march may be specified in the road movement order or in the SOP. If the prescribed rate requires double time, it is executed by each platoon in turn over the same selected stretch of road. Whenever possible, this stretch of road should be on level ground or downhill and have good footing. For road marches

keep up a rate of $2\frac{1}{2}$ miles per hour during the day and 2 miles an hour at night. Across country, maintain rates of $1\frac{1}{2}$ miles an hour during the day and 1 mile an hour at night. Small units on independent missions may move at a faster rate. The condition of the route and climatic conditions affect the rate. For example, a column marching on a moonlit night along a hard-surfaced route may maintain the same rate as for a daylight march.

37. Watch Synchronizing and Timing Halts and Starts

a. Platoon leaders and higher commanders should carry reliable watches. Watches with luminous dials are necessary for night marches. Before starting a march, the column commander synchronizes his watch with his leaders to within one-quarter of a minute.

b. Schedule the time and duration of halts in the road movement order. See paragraph 23 for intervals and duration of halts. All units halt on order of their leaders at exactly the time scheduled, regardless of gaps between units or whether the tail of the unit ahead is still moving. This gives the men full benefit of the rest halt, facilitates control, and prevents widening the interval between the units.

38. Changing the Rate of March

The need for a change of the march rate is most apparent at the rear of the column. If the pace setter is marching too fast, the men at the rear of the column will lag if they march at the correct rate. On the other hand, if the pace setter is marching too slowly, the men at the rear of the column close up on men ahead. When the column commander de-

cides that a change of rate is necessary, he warns the units at the rear of the column to expect a change of rate and passes this information from the rear to the front. He informs the pace setter last. The pace setter changes to the desired rate and the column makes the change smoothly. When practicable, the column commander announces change of rate at halts so that all men can be briefed. An example of need for such a change occurs when a marching unit is caught by a rainstorm, necessitating a slower rate.

39. Selecting Distances Between Units

Terrain, weather, and the tactical situation dictate a difference in distances between units under varying conditions. Normally, prescribe 100 yards between companies and 50 yards between platoons. The distances allow enough interval to absorb the accordion action caused by marching over hills and rough stretches. At night or in inclement weather, decrease these distances to 50 yards between companies and 25 yards between platoons to facilitate control. In daylight, when the route is extremely rough or when marching in flat, open terrain within artillery range of the enemy, increase the distances if you can keep control.

40. Selecting Distances Between Individuals

When marching on roads in daylight, increase the distance between men to more than 40 inches to give them room for marching comfort. The best distance is from 2 to 5 yards. An interval of over 5 yards between men creates an excessively long column with subsequent loss of control. At night,

set the interval from 40 inches to 3 yards so that the men can keep contact. Within these limits, the tactical situation dictates the interval. For example, when the route is interdicted by sporadic enemy artillery fire, set the interval at approximately 5 yards between men in daylight and 3 yards at night. When the route is not under fire, use shorter intervals.

41. Forced March Technique

Make sure that the men are rested before beginning a forced march (par. 24). Plans for a forced march are limited by terrain, weather, and the tactical situation. Assume that you desire to start a column of troops at daylight to make a foot march of 33 miles. You might divide the march as follows:

	<i>Hrs.</i>
First stage, 12½ miles. At 2½ miles per hour (daylight, on roads).....	5
Noon meal and rest.....	2
Second stage, 12½ miles. At 2½ miles per hour (daylight, on roads).....	5
Supper meal and rest.....	6
Third stage, 8 miles, at 2 miles per hour (night, on roads).....	4
Total	22

(The maximum distances made by forced marching are 35 miles in 24 hours; 60 miles in 48 hours; or 80 miles in 72 hours.)

Section III. MARCH SUPERVISION

42. General

All leaders see that their men are in the best possible condition before the march. During the march

they supervise the men to keep them in that condition.

43. Duties of the Company Executive Officer

The executive officer assists the company commander as directed. He usually leads the company over the designated route at the desired rate. He supervises the pace setter, supervises halts, and resumes the march according to the march order time schedule; he posts and supervises company traffic guards and locates and supervises the establishment of mess and latrine facilities at the end of the march.

44. Position of Leaders

a. The company commander has no specific position in the company formation; he moves where he can best observe and control the company. The first sergeant marches at the rear of the company during the march and moves to the head of the company headquarters just before the march ends. The company commander designates the march position for the company headquarters.

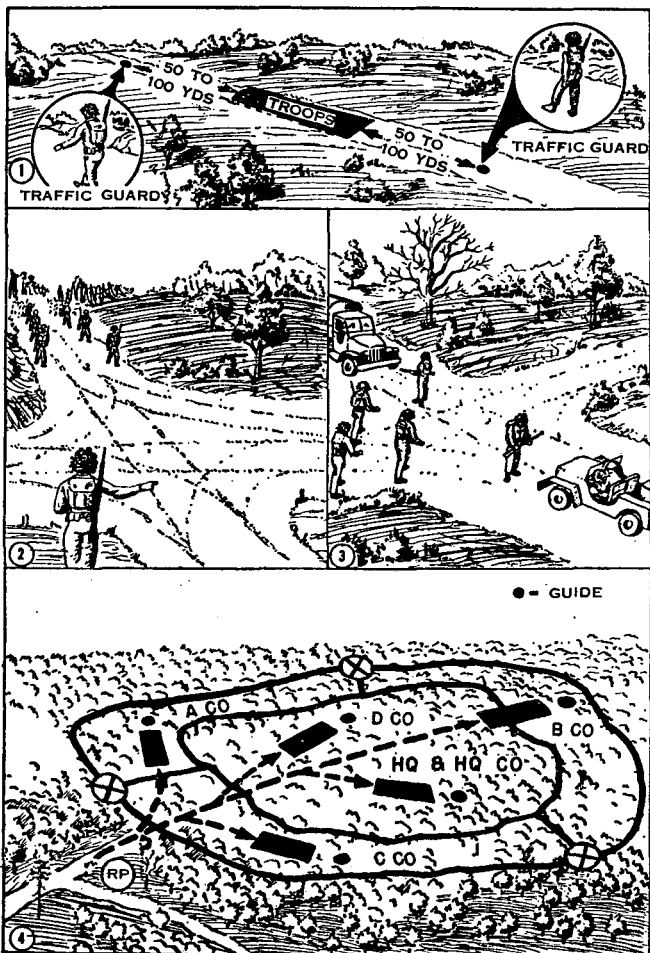
b. The platoon leader marches at the rear of his platoon. He may move to another position to direct or supervise his unit. When he expects enemy contact, he marches where he can best control his unit. The platoon sergeant marches at the head of the platoon. When the platoon leader is away from the rear of his unit, except for short periods, the platoon sergeant marches at the rear of the platoon. At the end of the march, all leaders move to the head of their units. The squad leader marches at the head of his squad.

45. Guides

Use guides to lead or direct a unit over a pre-determined route and in or out of a selected area (fig. 10). Place the guides at points along the march to control direction. Instruct the guides in their duties. Give them strip maps if possible. Include in their instruction how they do their job and answer normal questions about the unit and the movement. If conditions prevent posting guides ahead of the marching column, have them accompany the leading element of the column and post them along the route to indicate the direction for the other units. Have the guides posted along the route join the tail of the column as it clears their position or else provide trucks to pick them up. To provide for the safe passage of the column, place guides at road or trail intersections, at points where a new direction is taken, at points where the column might lose its direction, and at danger points. In cross-country marching, post guides along the route of march and at points where a new direction is followed. When the column approaches its destination, use guides to lead the units from the RP into their assigned positions in the new area.

46. Traffic Guards

Place traffic guards at least 50 yards to the front and rear of the column to slow or stop traffic. Each unit is responsible for placing guards at road intersections or other danger points where no route guide is provided. At times, guides and traffic guards may perform the same duties. When marching on roadways at night, traffic guards will require



- ① Guards at the head and tail of column slow or stop traffic.
- ② Guide at road junction points out correct turn.
- ③ Guides at busy intersection stop traffic while unit crosses.
- ④ Guides lead companies from RP into bivouac areas.

Figure 10. Use of guards and guides on the march.

flashlights or other suitable warning equipment to control traffic, provided the tactical situation permits.

47. Supervision During the March

Keep your men in formation and moving at the correct rate during the march. Allow no one to leave the column without written permission of an officer. Platoons march at route step, but in close interval in favorable terrain they may stay in step within platoons. Enforce food and water discipline. Set an example by personal endurance and leadership.

48. Supervision During Halts

See that your men clear the shoulders of the road at halts and remain in the immediate vicinity of their platoon. Check to see that all men get off their feet, loosen their equipment, and secure the maximum rest. Check the men for physical ailments. Have the medical aid men attend those with blisters, injuries, or other illnesses. Enforce food and water discipline. Check traffic guards. Require the men who relieve themselves to cover their feces. Have your men keep off their feet during the rest until alerted to form, normally a minute before resuming the march.

49. Supervision at the End of the March

At the end of the march see that your unit moves promptly to its assigned area in the march objective. Require the men to bathe their feet and treat any foot injuries. Platoon leaders supervise squad leaders while they make a foot inspection after their men have bathed their feet. Check your men's physical condition and see that they get hot food, water, shel-

ter, and rest. Check march casualties to determine the cause and to limit future march casualties.

50. Supervision in Battle Areas

In battle areas, reconnaissance and planning are paramount. When you are to be away from your men, inform the second in command of this fact and the time of your probable return. Attention to the men's needs is SOP and continual.

51. Security on the March

The tactical situation governs the security measures on the march. Protect your column against interference, surprise, and enemy observation, maintaining security in all directions during movement and at the halt. Use mobile reconnaissance elements as needed to the front and flanks to give prompt warning of hostile action. Security measures must include an adequate warning system.

CHAPTER 4

CARE OF THE FEET

Section I. DEFECTS OF THE FOOT

52. Description

The foot is designed to cushion the body against the shock of walking. It has two arches (fig. 11), a longitudinal arch and a transverse arch. The longitudinal arch is longer on the inside of the foot than it is on the outside. The inside of the longitudinal arch carries the body weight, while the outside serves to balance the weight. The shape of the longitudinal arch is maintained by the wedge shape of the bones, by the criss-crossing of the tendons of the strong leg muscles, and by the ligaments which bind the foot bones together. The shape of the transverse arch is similarly maintained, with an additional support provided by the foot muscles. Thus the bottom of the foot appears domelike. Standing causes the two arches to lengthen and flatten, making the foot larger. The heel and ball of the foot are protected by a pad of fat. The bones and tendons on the rest of the foot and the ankle have little padding. The foot's blood vessels are close to the surface and are easily compressed by tight socks or shoes.

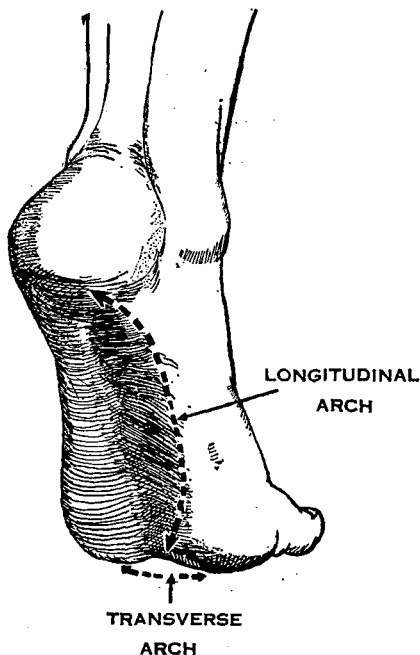


Figure 11. Arches of the foot.

53. Flat Feet

The arches differ in length and height in different persons. When the longitudinal arch is absent, a flat foot results. Flat feet are natural or acquired. Natural flat feet are usually satisfactory for marching, but acquired flat feet are usually painful and interfere with marching. The shape of the foot has little to do with the ability to march; this is primarily determined by whether or not the feet hurt. Flat feet may result from prolonged illness, im-

proper shoes, improper posture, or from weakening or stretching of the ligaments and tendons supporting the arch. Flat feet are aggravated by prolonged standing and by carrying heavy loads. Acquired flat feet and painful feet are helped by physical training before marching, progressive march training, proper posture, proper shoes, and personal hygiene. The foot is strengthened by walking with the toes pointed straight ahead.

54. Foot Ailments

a. Prevention of foot trouble is the best first aid for feet. The soldier can prevent many minor foot defects by personal care. He also corrects minor defects like blisters, abrasions, sweaty feet, and callouses.

b. Blisters are caused by friction. Therefore, if the cause can be controlled the blister may be prevented.

- (1) *Prevention.* Carefully check the condition and fit of shoes and socks. When friction reddens the skin, change to clean socks, use a foot powder, or take other appropriate measures to prevent the blister from forming. Often a bandage or adhesive plaster over the irritated area protects against chafing and thereby prevents the blister. Shoes that are not properly laced tend to slip on the foot, causing socks to "creep" and setting up friction that leads to a blister. Socks with holes, rough darned areas, or socks that are damp are primary causes of blisters or other foot disorders. Dust-

ing the feet with approved foot powders helps to keep the feet dry and reduces chafing. Regular foot inspection conducted by an officer or noncommissioned officer reduces the foot problem among troops.

- (2) *Treatment.* Wash carefully around the blister with soap and water, being careful not to break the skin if the blister is unbroken. If the blister is unbroken, empty it by pricking its lower edge with a needle or knifepoint that has been held in a flame. Do not remove the skin, but cover the blister with a band-aid or similar dressing smoothly applied with adhesive plaster extending beyond its edge. After the blister dries, remove the adhesive plaster. See figure 12.

- (3) *Infected blister.* If a blister becomes infected, report to the dispensary.

c. Clean and cover abrasions on the feet with a band-aid or similar dressing smoothly applied with adhesive plaster extending beyond its edge as soon as possible.

d. Red, painful areas which accompany sweaty feet are avoided by keeping the feet dry. Do this by changing to clean, dry socks, and by using foot powder.

e. Callouses are caused by ill-fitting shoes or by flattening of the arches, which puts additional pressure on the wrong parts of the foot. For temporary relief, place padding around the calloused area to distribute the pressure. For permanent correction and prevention, wear correctly fitted shoes.

f. Serious cases of athlete's foot and other fungi infections should receive prompt medical attention.

g. Trench foot is caused by exposure of the feet to cold and dampness and improper blood circulation. In severe form it may lead to gangrene and loss of the feet or toes. This condition develops when feet stay cold and wet for prolonged periods. Although you cannot always keep your feet dry and warm under combat conditions, you can help to prevent trench foot by observing the following rules:

- (1) Keep feet as dry as possible. Dry your socks and boots by every expedient and change socks as often as you can. If possible, take off your boots before going to sleep and keep them under the covers or in the sleeping bag; in this way, they will not freeze and will be partially dried out by the body heat. Carry spare socks under your outer clothing so that the body heat will help dry them out; keep out of mud and water when possible.
- (2) Keep the clothing about the legs and ankles loose. Avoid tight boots, socks, and boot laces.
- (3) Exercise and massage your feet. Even in a stationary position, flexing the toes and stamping the feet help to maintain circulation. As often as possible, massage your feet or pair off with a buddy and massage each other's feet.
- (4) Carefully follow all instructions for the wearing of special footgear.

h. Frostbite of the feet develops rapidly in sub-

freezing temperatures unless precautions are taken. The toes are most frequently affected. Prevention consists of wearing sufficiently warm footgear to withstand the cold, taking every opportunity to warm and exercise your feet, and carrying out the proper foot hygiene measures.

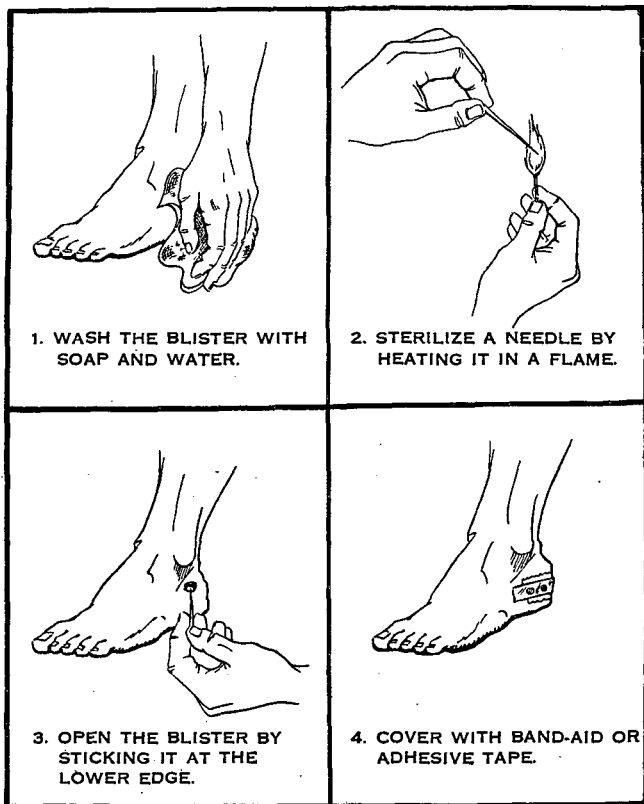


Figure 12. Treatment of a foot blister.

55. Foot Hygiene

Foot hygiene includes—

a. Keeping your feet clean. Wash your feet and thoroughly dry them immediately after a march. Avoid soaking your feet and be careful to dry around and between the toes. If water is not available, rub your feet briskly with a dry cloth.

b. Dusting your feet frequently with foot powder to keep them dry. Be sure to powder between the toes. Rub off excess powder.

c. Trimming your toenails straight across. Use a sharp instrument and be careful not to tear the nail (fig. 13). By trimming the toenails correctly and wearing properly fitted shoes, you prevent in-grown toenails.



TOE-NAIL PROPERLY TRIMMED

Figure 13. Keep your toenails trimmed properly.

Section II. FOOTWEAR

56. Tests to Check Size

a. The unit commander prescribes the type of footwear worn by his men. He is responsible for proper fitting. He checks the fit by having the soldier stand with his weight evenly distributed on

both feet. The soldier should be wearing the type socks which are to be worn with the shoes, and should have the shoes properly laced.

b. There are four tests (fig. 14) to check the correct fit.

- (1) *Test No. 1.* Determine the fit under the arch by grasping the shoe over the instep with your thumb on the outer side and your fingers on the inner side. The leather should be free of wrinkles.
- (2) *Test No. 2.* The ball of the foot should rest on the widest part of the sole.
- (3) *Test No. 3.* Determine the fit of the shoes in width by pressing your thumbs against the outer and inner sides near the sole, and by running your thumbs toward the center. There should be no tightness of the leather.
- (4) *Test No. 4.* Determine the fit in length by pressing down on the shoe with both thumbs at the toe end of the shoe. There should be one-half inch between the end of the great toe and the end of the shoe (fig. 14). If you cannot compress the toe of the shoe, estimate the length of the foot by tests Nos. 2 and 3.

57. Types of Footwear

a. In temperate weather the combat boots with the composition sole or the service shoes with the composition sole are adequate for marching. The best sock combination is usually two pairs of light wool socks or one pair of cushion-sole wool socks.

b. Choose cold weather footwear with care.

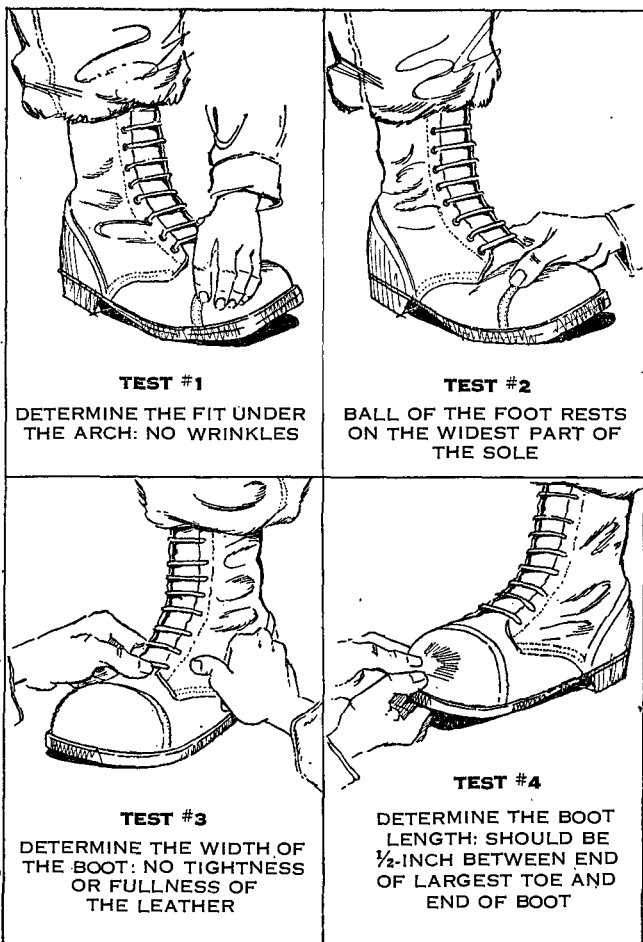


Figure 14. Test boots for correct fit.

Temperatures near freezing demand waterproofed footwear. In subzero temperatures, use footwear

made of a porous wind-resistant material that does not trap moisture inside, because in extreme cold, moisture trapped inside a boot freezes. Keep all lacings loose in cold weather.

c. For near freezing temperatures on wet and muddy terrain, and for temperatures down to 0° F., the insulated rubber combat boot provides protection against cold and wet. Wear the boot with one pair of cushion-sole socks and replace with dry socks as often as possible. However, this boot is not designed for wear during long marches. In temperatures at or slightly above freezing, the feet will become tender due to excessive perspiration, and constant friction may occur unless proper foot hygiene measures are used.

d. For temperatures from 20° F. to -40° F., arctic felt shoes are excellent marching footwear. Arctic felt shoes are not waterproofed; therefore, do not wear them in temperatures above 20° F., because the heat of the foot melts the snow and the shoes become wet. Wear two pairs of wool ski socks and one pair of felt insoles with arctic felt shoes.

e. Wear the mukluk in temperatures below -40° F. As the mukluk is not waterproofed, do not use it in temperatures above 20° F. It is flexible but gives little foot support; therefore, the wearer may complain of aching feet. The sock combination consists of one pair of wool ski socks, one pair of felt socks, and two pairs of felt insoles.

f. The service boot or shoe is better for marching than overshoes, shoepacs, arctic felt shoes, or muklucs. Conditions dictate when to sacrifice marching efficiency for protection from weather and climate.

g. Keep footwear in the best possible condition. Remove dirt and mud from leather shoes and boots, using a dull instrument to avoid cutting the leather. Clean and preserve the leather with soap or saddle soap. Thoroughly brush felt shoes and mukluks to rid them of snow. Repair shoes and boots before wear ruins their structure.

h. Break in new shoes or boots before wearing them on long marches. When shoes are new, wear them at first only for short periods. If practicable, do not wear a pair of shoes on two successive days.

58. Socks

a. To check the fit of socks, stand with the weight evenly distributed on both feet. No tightness or fullness will show if the fit is correct. In a new sock, allow three-eighths of an inch excess length for shrinkage.

b. Chart of sock sizes, wool sock:

Shoes.....	5-5½	6-6½	7-8	8½-9	9½-10½	11-11½	12-13	13½-14	14½-15
Socks*.....	10	10½	11	11½	12	12½	13	13½	14

*Cotton socks one-half size smaller.

c. Socks that are too large wrinkle inside the shoe, rub the feet, and cause blisters and abrasions. Socks that are too small wear quickly and reduce the free circulation of blood in the foot.

d. To prevent cramping your feet when more than one pair of socks is worn at the same time, wear an outer pair that is at least a half size larger.

e. Change socks daily. Dirty socks are conductors of heat and allow warmth to escape. Wash

them regularly in luke warm water for cleanliness and to preserve the fiber of the sock. Hot water causes excessive shrinkage.

f. Socks play a big part in protecting the feet from cold. Several pairs of socks are warmer than one pair since the insulating layers of air hold the heat in. If at all possible, carry extra insoles. Take care to keep socks and insoles dry in cold weather. They may be dried by body heat by placing them inside the clothing or the sleeping bag.

CHAPTER 5

TRAINING

Section I. OBJECTIVES AND PRINCIPLES

59. Objectives

Training in foot marching is conducted to develop a unit capable of marching to its objective and arriving in condition to perform its mission; and to develop the unit's discipline, leadership, teamwork, morale, health, strength, and endurance. The objectives are accomplished by progressive training which moves from that which is easy to that which is difficult.

60. Balanced Progressive Training

a. Physical condition and endurance are progressively developed by exercises and by marches within the increasing capabilities of the men. Training marches start with short distances, light loads, and smooth routes, and gradually progress to longer distances, heavier loads and rougher routes. Trained men are kept in excellent physical condition by frequent marches.

b. Mental conditioning is an essential part of training in foot marches. Soldiers are informed of the military need for a unit to be proficient in marching. Their confidence in leaders is developed by proper planning and conduct of the march. Self-

confidence in their ability to march is gained by progressive training.

c. A knowledge of marching is essential for soldiers. They are taught march discipline, individual preparation for the march, conduct on the march, march technique, and pack-carrying technique.

Section II. TRAINING PLANS AND ORDERS

61. Training Programs

The training program also includes care of equipment and clothing, accident hazards of the march (toxic plants, venomous reptiles, forest fires, extremes of heat or cold, etc.,) basic medical subjects, and physical conditioning before marches are taken. Do not schedule actual marching in the first week of recruit training, although related conferences and demonstrations may be given. When training in marches begins, include related subjects such as individual and group cooking, field inspections, bivouacs and tent pitching, basic signal communication, security on the march, and individual tactical training.

62. Training Schedules

a. Following are some suggestions for scheduling and conducting marches:

- (1) Plan your short marches to pass points of interest on or near the reservation. Before the march, remind your leaders of these points so that they can explain and discuss them as the unit passes.
- (2) Schedule short marches in the afternoon periods so your men can clean themselves

and their equipment after the march. Protect against discomfort and dangers caused by mosquitoes, flies, mites, and other insects by use of appropriate control materials. When possible, select shaded areas for hot weather rest stops and protected areas for cold weather halts.

- (3) Stimulate pride in your unit's ability to march.
- (4) Give your men something to look forward to after the march.
- (5) Encourage singing during the march.
- (6) Allow the platoon wits to show off, within reason, during a march, and devise other plans to maintain interest.
- (7) Consider each movement on foot, no matter how short, as a march to be conducted according to regular march principles and techniques.
- (8) Mark half-mile and mile distances so that leaders can check by the watch to see they are on schedule.

b. On an often used road, paint white stripes along the side at 30-inch intervals to form a horizontal ladder. This helps your men to measure their pace and allows leaders to check the rate of march.

CHAPTER 6

PREPARATION FOR THE MARCH

63. General

A unit's ability to make a successful march depends on the marching ability of its men. When making a road movement plan, consider the warning order, a route reconnaissance, length and rate of march, equipment to be carried, formation and organization of the march, security and safety factors, and communication. When prepared correctly, the road movement order includes all of these items, as well as the prescribed uniform, assembly time, and times for meals. Take steps before the march to get your men in the best possible physical condition. Inspect them for physical defects that would prevent them from completing the march. Leave those men with physical defects behind or provide transportation for them. Inspect the men's equipment to see that it is adjusted properly. To reduce planning time and to insure more effective execution of the march, develop a standing operating procedure (app. II).

64. Warning Orders

a. The purpose of a warning order is to give subordinate elements of a command advance notice or warning of a contemplated operation or action, so that they may have time to make necessary prep-

arations. A warning order answers as many of the following questions as are known by the issuing headquarters:

- (1) Who? (The unit or units involved.)
- (2) What? (The type of movement.)
- (3) When? (The time the movement is to begin.)
- (4) Where? (The destination.)
- (5) Why? (The mission.)

The absence of any one item of information should not delay the issuance of the warning order.

b. A typical warning order follows: "1st BG, 87th Inf, marches on 13 March to Area A to participate in a field problem."

c. The order of execution designating the exact route and time follows at a later date. The information contained in the warning order is enough to alert the unit and permit it to make plans.

65. Route Reconnaissance

a. Send out a reconnaissance party before the march to gain information for use as a basis for the march order. In combat areas, when time is limited, the reconnaissance party is organized to precede the column, send back necessary information, post guides, and reconnoiter the new area. When time allows, the route reconnaissance determines—

- (1) Route or routes available for the movement.
- (2) Location of the new area.
- (3) Type and condition of the road or roads, to include traffic conditions and other hazards.
- (4) Suitable rates of march over various parts of the route.

- (5) Security measures necessary.
- (6) Location of the start point (IP) and the release point (RP).
- (7) Distances from the IP to all critical points.
- (8) The location and extent of any obstructions and the amount of engineer work (if any) necessary to permit the unit to move over the route.
- (9) Suitable areas for rest halts and feeding.
- (10) The number of guides needed and the location of their posts.
- (11) Special means of control, communication, and evacuation.

b. Organize the reconnaissance party according to your unit SOP. For a battle group, make it up of reconnaissance elements, a traffic control representative, and an engineer representative. Organize the reconnaissance party so that it can be dispatched promptly after the decision to move has been made.

c. For a battle group, the reconnaissance platoon leader usually commands the reconnaissance party.

d. The reconnaissance party submits its information in a route reconnaissance report. A sample route reconnaissance report is shown in table I.

66. Road Movement Order

a. A road movement order is an operation order designating the route, destination, schedule, rate, formation, time intervals, organization of the column, commanders of the elements of the column, and other details of the march not covered by the SOP. Orders are simplified by the use of sketches, overlays, and march movement tables.

b. Battle groups usually disseminate information

for movements by using oral operation orders (*c* below), route overlays, and road movement tables or any combination of these three methods. The road movement table with strip map or route sketch is issued as an annex to the oral order.

c. An example of an oral operation order follows:

1. SITUATION

a. Enemy forces:

(1) Enemy has withdrawn across LE-HIGH River.

(2) Indications are that the enemy will continue to delay on successive positions.

b. Friendly forces:

1st BG, 87th Inf, moves by foot and motor to assembly areas vicinity SUMMIT Hill (619845) at 180600 Apr 1960.

c. Attachments and detachments: None.

2. MISSION

Co A moves by foot at 180700 Apr to assembly area vicinity LANSFORD (673890).

3. EXECUTION

a. Concept of operation: CO A moves by foot and motor in five march units, 1st march unit cross IP at 180700 Apr.

b. 1st Plat: March unit 1.

c. 2d Plat: March unit 2.

d. 3d Plat: March unit 3.

e. 4th Plat: March unit 4.

f. Wpns Plat: March unit 5.

g. Coordinating instructions:

(1) Quartering party assemble co CP at 180500 Apr.

Table I. Sample Route Reconnaissance Report

Route	Speed-ometer reading	Miles from SP	Suitable marching speed (miles per hour)	Remarks
IP 8th Div Rd at Superhighway	159.6	-----	2½	Bridge; hard surface; 2 guides.
8th Div to Cusseta Rd	159.8	0.2	2½	Guide: traffic heavy.
8th Div Rd to Jamestown Rd	160.0	.4	2½	Turn left on Jamestown. Guide: traffic heavy.
Jamestown Rd to Hershey Rd	161.0	1.4	2½	hard surface. Traffic heavy; 1 guide, Jamestown bears to right.
Jamestown Rd to Hourglass Rd	162.0	2.4	2½	2 guides.
Jamestown Rd to Crosbie Rd	162.4	2.8	2½	Do.
Jamestown Rd to Yankee Rd	164.0	4.4	2½	Do.
Bridge—Weems Pond	164.7	5.1	2	Good bridge; water close to road on both sides. Stop vehicles approaching column. Gravel road. Dusty.

Jamestown Rd to Lightning Rd----	166. 1	6. 5	2	2 guides.	
Jamestown Rd to Sunshine Rd----	167. 3	7. 7	2	2 guides. Traffic light. on Sunshine Rd. Dirt road, slippery when wet.	Turn right
RP at CR of Sunshine Rd and Sedan Tr.	168. 8	9. 2	2	2 guides. Dirt road.	

- (2) March units cross SP starting at 180200 Apr in order 1, 2, 3, 4, and 5.
- (3) Co vehicles move by bounds.
- (4) Annex A, Strip Map.

4. ADMINISTRATION AND LOGISTICS

Breakfast 0400 18 Apr. Individual C ration issued with breakfast.

5. COMMAND AND SIGNAL

- a. Company operational code in effect.
- b. March CP at head of 2d march unit.

"Time is now 1515"

"Any questions?"

d. An example of a road movement table is shown in table II.

e. A route sketch (fig. 15) may be issued with the road movement order. When the route selected follows twisting roads and trails, the sketch helps leaders to maintain direction.

67. Inspection Before the March

Before starting on a march, the squad leaders inspect their men and their equipment. The platoon leaders hold each squad leader responsible for his squad and its equipment. The company commander and platoon leaders supervise the inspection. Inspect feet for condition and cleanliness; shoes, socks, and clothing for proper fit, condition, and cleanliness; equipment for condition, completeness, and adjustment. Determine each man's physical fitness. Check the completeness of water, rations, and supplies and equipment. Immediately correct all defects that might reduce your men's activity and stamina. Send men who appear to be ill or physically unfit to the dispensary (fig. 16).

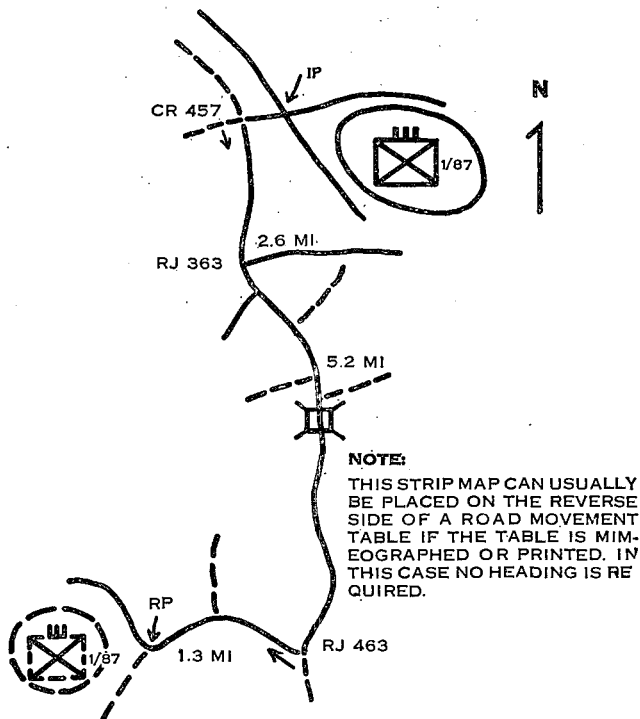


Figure 15. Route overlay (strip map) to accompany road movement table.

68. Duties of the Company Commander Before the March

a. The company commander issues his warning order in time to allow his men maximum time to prepare for the march. If his company marches by itself, he makes a reconnaissance to select the best march route (fig. 17). If his company is a part of a larger body, he checks the route to the IP and makes

a march plan. Then he issues the road movement order. It includes—

- (1) Who will participate.
- (2) The march objective.
- (3) Reason for the march.
- (4) Time for forming for the march.
- (5) Formation, organization, rate, start point, route, and regulating point for the march.
- (6) Uniform, equipment, amount of water and rations to be carried, hazards to be controlled, and other administrative considerations.
- (7) Methods for preventing straggling.
- (8) Details of march discipline.
- (9) March security.
- (10) Communication on the march.

b. Many of the routine details of the road movement order may be included in the company SOP.

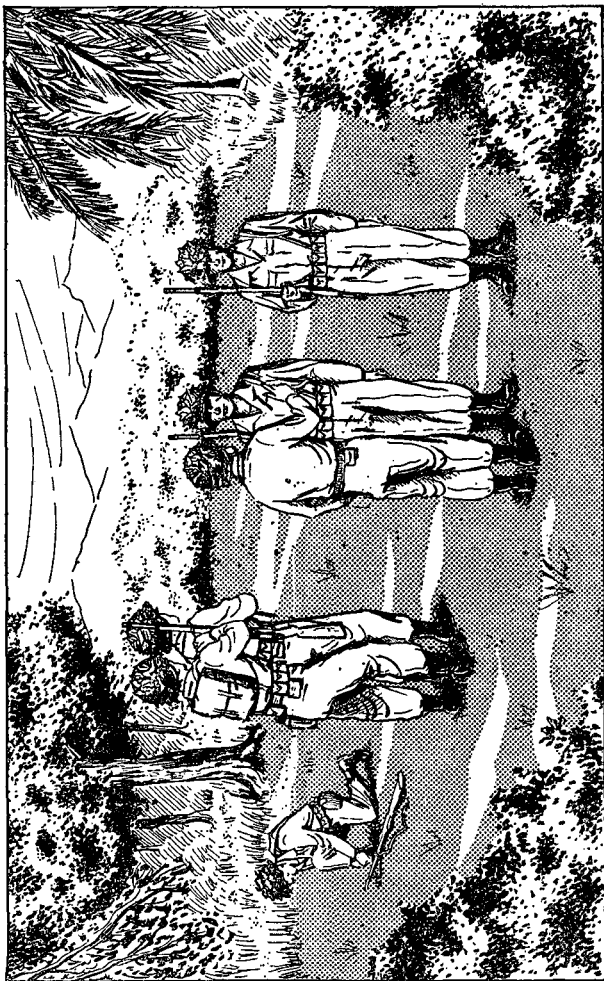


Figure 16. Inspect men and equipment before going on a march.

Table II. Road Movement Table

(Classification)

Copy No. 2
1st BG, 87th Inf
FORT BENNING, GEORGIA
121600 March 19--
AAR35

Annex A (Road Movement Table) to Operation Order 1
Reference: Strip Map (fig. 15).

Serial	Orgn & comdr	March		Control of movement			Remarks
		Rate	TL (min)	Critical points	Reach	Clear	
Foot-----	Co A CO, Co A	2½	9	IP CR 458	130800	130809	1. Route will be marked.
				RJ	Mar 0903	Mar 0912	
				RP	1141	1150	
	Hq & Hq Co CO, Hq Co	2½	3	IP CR 458	0810	0813	2. Personnel clear roads at halts.
				RJ	0913	0916	
				RP	1151	1154	

Co B	2½	9	IP CR 458	0814	0823	3. Instructions for motor elements will be issued separately.
CO, Co B			RJ 363	0917	0926	
			RP	1155	1204	
Co C	2½	9	IP CR 458	0824	0833	
CO, Co C			RJ 363	0927	0936	
			RP	1205	1214	
Co D	2½	3	IP CR 458	0834	0837	
CO, Co D			RJ 363	0937	0940	
			RP	1215	1218	

NOTES

- *1. Formation: Column of twos with five yards between men, single file on each side of the road.
 - *2. Distances: 50 yards between companies, 20 yards between platoons.
 - *3. Equipment: Uniform D, steel helmet, full field equipment, full canteens.
 - *4. Quarters party: Furnished by Headquarters and Headquarters Company.
- Distribution: A

THOMPSON
Col

OFFICIAL:
SELLERA
S3

*These items may be contained in the unit SOP. If such is the case, refer to SOP for details and list as notes in the movement table only those instructions not covered in SOP.

(Classification)



Figure 17. Make a reconnaissance before a march and select your route.

CHAPTER 7

SPECIAL OPERATIONS

Section I. MOUNTAIN AND SNOW MARCHES

69. General

Mountainous terrain is characterized by heavy woods or jungle, rocky crags and ice covered peaks, hills and valleys, narrow trails, high altitudes, and few roads, usually of poor quality. Besides terrain obstacles, march rate is further reduced by sudden and localized rain and snowstorms, fog, and intense heat. Marching in fog presents the same difficulties as marching at night.

70. Conditioning and Acclimatization

The first consideration in mountain marching is to conserve the strength of your men. Altitude sickness is extremely rare at low or medium elevation and in this type mountain marching it is not necessary to give troops any special conditioning or acclimatization (adapting oneself to new climate conditions particularly as related to change in altitude). In high altitudes, a 10- to 14-day conditioning or acclimatization period is needed. During this training period provide for graduated physical exercises. Include short marches and appropriate rest periods.

a. Hazards inherent to mountainous terrain include snow blindness, sunburn, slips, falls, landslides, and snowslides.

b. Snow blindness may be prevented by dark glasses or other eye covering. Sunburn may be prevented by keeping the body surface clothed and by using sunburn preventative medication on exposed surfaces. Troops should be made aware of the fact that snow blindness and sunburn can occur at high elevations even though the sky is overcast. Proper footgear will help prevent slips and falls, and troops should be alerted to the dangers of landslides and snowslides which may be precipitated by careless actions.

71. Clothing

Wear layers of porous clothing and wear wind-proof outer clothing to keep out the wind and keep in the warm air. During cold weather exercises, guard against perspiration by loosening the outer clothing so that ventilation will reduce body heat and carry away body vapor. Keep one dry garment handy in the pack or rucksack in case your other clothing becomes wet.

72. Equipment

When carrying loads in mountainous terrain, carry the weight high at all times with the load distributed between the shoulders and hips; reduce leverage to the minimum. Provide air space between the pack and the body by using packboards to help keep the back dry. Carry only essential items.

73. Water Discipline

Exercise strict control over all sources of water. Impress on your men the fact that mountain water is no safer to drink than any other unpurified water. The air is generally dry in high mountains and sweat evaporates quickly. Although this may lead you to think that you are not perspiring, you actually are. Unless you take enough water and salt to replace that lost through perspiration, the loss of fluid and salt may soon lead to acute fatigue, muscle cramps, or heat exhaustion.

74. Formation

Use a single file with 2 to 5 yards between men when the tactical situation permits. This allows each man freedom in selecting his footing, adjusting his stride, and stepping over or around obstacles without halting or slowing down the man behind him (fig. 18).

75. Rate of March

a. Determine the march rate in the mountains by the method of movement (foot, snowshoes, skis), the depth of the snow if any, the condition and state of training of the troops, the visibility, and the terrain. Use the $2\frac{1}{2}$ miles per hour rate to estimate the marching time on good trails. However, as the climb and descent considerably increase the total effort and time, add 1 hour for each 1,000 feet of ascent or 1,500 feet of descent. For example, a 5-mile march normally requires 2 hours. When there is a climb of 2,000 feet and a descent of 1,500 feet, the march will take 5 hours.



Figure 18. Use single file when marching in mountains.

b. To conserve strength and combat efficiency when marching uphill, maintain a slow and steady pace. Zigzag to reduce the steepness of the grade. Keep your body nearly vertical. To obtain sure footing place the entire foot on the ground. On side slopes keep feet flat by bending the ankles. Check footholds by bending your knees slightly and applying the weight of your body.

76. Halts

Make halts as needed, rather than on a fixed time schedule. Halt near sheltering terrain features. After the first 15 minutes of marching, halt to adjust clothing and equipment. See that your men remove their packs and weapons during the regular halts. Encourage them to lie down with their feet elevated. See that they put on or take off their clothing as the conditions change.

77. Communication

Give communication special planning and supervision in mountainous country. Radios, although very useful, are frequently masked. Maximum use therefore must be made of visual signals, light aircraft, messengers, and guides. When a high degree of control is dictated by the tactical situation, wire should be laid as this is the most dependable means available.

Section II. DESERT MARCHES

78. General

a. Troops from temperate climates require special conditioning for desert operations. As desert tem-

peratures are abnormally high during the day, the body loses more moisture through perspiration. The lack of concealment, the difficult ground surfaces, and the need for more water during marching limit desert foot movements. The intense heat and the difficulty of walking in loose, shifting sand or sharp rocks reduce desert marching rates to one or two miles per hour. Marching on a desert is normally not confined to roads and trails.

b. Sunburn and glare blindness are ever-present hazards. Their prevention is the same as discussed for sunburn and snow blindness in paragraph 70.

c. Troops should be trained in the identification and control of the poisonous insects and venomous reptiles that are sometimes found in the desert. Training should also be given in the use of equipment such as goggles, respirators, neck cloths, nose cloths, and similar items required during sand storms.

79. Clothing and Equipment

a. In some desert areas the temperatures may range from 120° to 130° during the day to freezing at night. Provide sweaters, overcoats, and blankets for the men at night. The helmet liner is suitable to protect the head and eyes from the sun's direct rays. Special equipment includes goggles, respirators, sunglasses, neck cloths, nose cloths, and two canteens.

b. For navigating long distances, use the sun compass, corrected for date, suntime, and latitude.

80. Water Discipline

Water plays an important part in the success of desert operations. Supply your men with adequate

water and train them to avoid waste. Water found in the few local sources is usually infected and disagreeable. (See FM 21-76 for information on water sources.) Replace the salt lost through perspiration by drinking water in which salt has been dissolved.

81. Formation

Use extended formations with 5 to 10 yards between men to reduce dust and to allow air to circulate through the column.

82. Halts

Because of the intense heat and the fatigue caused by marching in loose sand, halt whenever necessary.

83. Communication

Radio is the most efficient and convenient means of desert communication, but also use visual signals, light aircraft, foot and motor messengers, and wire when use is dictated by the tactical situation.

84. Night Marches

Make night marches when possible, to avoid the fatigue and discomfort caused by high daylight temperatures. The brightness of the desert moon and lack of vegetation may allow formations that are similar to those used during daylight. In the absence of moonlight, close up the formations to aid in controlling the unit. Have direction-finding parties in vehicles precede the foot column (fig. 19); if this is impossible, use compasses.

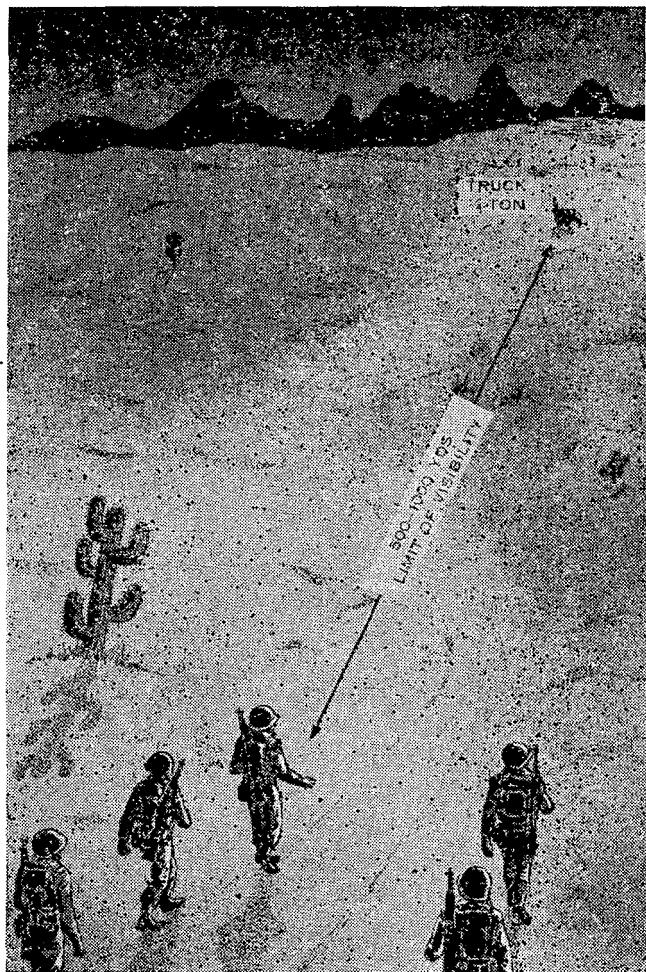


Figure 19. Spot vehicles as landmarks to guide troops in desert marching.

Section III. JUNGLE MARCHES

85. General

Jungles have only a few roads and trails. Where the undergrowth is thick, progress is exceedingly slow. In many cases a path has to be hacked out before movement is possible. Limited visibility requires a reduction of the distances between units. Follow known trails, streams, and ridges whenever possible. Make frequent halts to allow the column to close up. Night movements are extremely difficult because of poor visibility, tendency of units to become lost, and lack of communications. Select march objectives for day marches that can be reached by the tail of the column before dark. Units cannot pass one another on jungle trails. When the head of a column reaches a dead end, select a new route and have the march unit closest to that route lead off.

86. Conditioning

a. Temperate zone troops are apt to magnify the physical hardships and dangers encountered in jungle movements. Limited visibility and strange noises cause a feeling of insecurity. Troops new to jungle areas may fear the unfamiliar diseases and climate. To help them overcome this insecurity, give them training that will familiarize them with jungle conditions. Conduct training in subtropical areas or areas of dense underbrush when possible.

b. Troops should be trained in the prevention of and treatment for heat stroke and heat exhaustion. They should also be trained in the identification and control of insects and dangerous reptiles and animals.

87. Clothing

The two-piece herringbone twill combat suit is satisfactory for jungle wear, and the issue field shoe or boot is satisfactory for general use. The helmet liner is an ideal sun hat. The poncho is very useful as rain clothing, ground sheet, or shelter half. During rainy periods wear it to keep the pack and the upper part of the body dry. When the poncho is not worn, use it as a roll to keep extra clothing dry. As tropical nights are often cool, wear a knit shirt for warmth and the poncho for cover.

88. Water Discipline

See paragraph 12.

89. Formation

Jungle trails usually restrict the formation to a column of files (fig. 20). To facilitate control, to improve security, and to achieve more rapid movement, move each unit in the column as compactly as possible, using connecting files to keep contact between units. As point duty is fatiguing, rotate the leading elements periodically and rotate assignments within the leading elements.

90. Rate of March

Calculate jungle marches in terms of time rather than distance. The poor quality or absence of trails and the dense vegetation make movement slow. Troops moving on good jungle trails rarely exceed a rate of one mile an hour. Poor trails reduce the rate to half a mile an hour or less. The rate is further reduced by the hand-carrying of equipment.



Figure 20. March single file on a jungle trail.

91. Trail Breaking

When you cannot follow a ridge or stream or trail, maintain direction by compass or by marching from one terrain feature to another. Use machetes for cutting trails. Rotate the men frequently, because trail building is exhausting.

92. Halts

Regular halts in jungle marches are often supplemented by additional rest halts as needed. When it is impracticable to feed a regular hot meal at the noon halt, order a rest period of about 45 minutes. Encourage your men to drink lemonade or bouillon preparations; these drinks are quickly assimilated and are palatable and refreshing.

93. Communication

Use all means of communication where appropriate. Foliage, dampness, and ground masks somewhat reduce the usefulness of radio. The vegetation frequently limits visual signaling. Foot messengers are the most dependable means of communication. Liaison aircraft can be used to relay radio messages.

94. March Discipline

The solution of control difficulties in the jungle requires decentralization, which depends on the skilled march discipline of every small unit. Maintain contact and keep the prescribed distances. Prevent telescoping the column by keeping all men of your column alert. Keep your squads fairly well closed up.

Section IV. ARCTIC MARCHES

95. General

The technique of marching does not materially change in the arctic, but training, march discipline, and control become more difficult than in temperate areas. Most arctic marching is cross-country in column, usually on a trail. Troops require special equipment. The low temperatures, snow, ice, extended darkness during winter, and the lack of roads and landmarks increase the problems of marching. Marches in snow and extreme cold are made on foot, on skis, on snowshoes, or by a combination of these methods. Trail breaking in deep snow and the carrying of a heavier-than-normal pack demand great physical exertion. The body requires increased amount of food to produce the heat and energy required, so hot food and drink become prime factors. Well-trained and properly equipped troops are able to move confidently cross-country in snow or extreme cold.

96. Clothing

a. Men perspire on the march even in cold weather. Perspiration moistens clothing and reduces its insulating qualities. Damp clothing may cause chilling and frostbite. To increase ventilation and air circulation, the men should loosen their clothing or remove outer garments. As soon as the situation permits, they should change their underwear (at least the undershirt) and rub their skin dry. They should also keep extra garments in the pack so that they can be readily removed and worn during long breaks.

b. Both inner and outer cold-weather clothing is loose-fitting and should be kept clean and dry. Air pockets between layers of clothing provide insulation.

c. Outer clothing is windproof to retain the insulating air held between the layers, and it is water repellent to keep light rain and snow from penetrating to the inner clothing.

d. Do not wear waterproofed clothing in sub-freezing weather, because body moisture collects on the inside and turns to frost.

e. The inner clothing consists of several layers of a spongy insulating material, such as wool. Clothing requirements vary with the individual, and each man adjusts the number of undergarments he wears to prevent both overheating and chilling.

97. Equipment

When not equipped with snowcrossing equipment, do not make cross-country marches in deep snow except in an emergency. To increase mobility use snowshoes, skis, crampons or ice creepers, and sleds or ahkios (an aluminum, boat-type sled). Sleds may be improvised from skis. Skiers wear rucksacks, but troops on foot or on snowshoes usually wear packboards (fig. 21). Typical individual equipment includes snow goggles, a brush to keep clothing free of snow, and a large pocket knife. Machetes, hatchets, axes, and saws are necessary for clearing brush and cutting firewood.

98. Water Discipline

Water is as essential in the arctic as in any other climate. However, the amount of water available



Figure 21. Troops on foot usually wear packboards in the arctic.

may be limited because of the difficulties of getting and storing water in a liquid state. Dehydration is as prevalent in extreme cold as it is in extreme heat.

Normally, a march unit supplies its own water from day to day by melting snow or from local sources such as rivers and lakes. If this is done, men sterilize the water by boiling it or treating it with water purification tablets. Eating snow should ordinarily not be permitted since it violates the principles of water discipline and there is no way of knowing if the snow is clean. However, in an emergency, patrols and small groups of men breaking trail in new territory may place small balls of snow in their mouths to melt. A handful of snow compacted and placed in the mouth at each halt quenches thirst. Large amount of snow eaten at one time may produce stomach cramps or chills. Men should be impressed with the necessity of having at least two-thirds of a canteen of purified water before starting.

99. Formations and Trail Breaking

a. Single file is the usual march formation in deep snow when not expecting contact with the enemy (fig. 22). Use a column of twos to shorten the length of the column but separate the files so that they do not interfere with each other during the march.

b. Trail breaking is the chief problem when marching in deep snow. Organize a detachment to break trail for the main body. The trail-breaking detachment precedes the main body about 1 hour for each 3 miles of marching distance. For example, if a 15-mile march is planned, dispatch the trail breakers 5 hours in advance of the main body. Use men on skis or snowshoes, or tracked vehicles for trail breaking. When breaking trail by manpower, the leading man in a file breaks trail for a short assigned

distance or time. He then steps out of the trail and falls in at the end of the column. The next man in the column automatically begins to break trail. Trail breaking is strenuous work, so rotate the detail frequently to save the strength of your men, prevent overheating, and permit a steady march by the main body.



Figure 22. Single file is the normal cross-country march formation in snow.

100. Rate of March

Wear skis or snowshoes when marching in snow deep enough to restrict the free movement of your feet. Marching considerable distances on snowshoes requires training; the rate varies from $1\frac{1}{2}$ to $2\frac{1}{2}$ miles an hour. Trained skiers are the most mobile troops in open terrain if the snow is over a foot deep. The rate, limited by the slope, varies from $1\frac{1}{2}$ to $3\frac{1}{2}$ miles an hour. Trained skiers can travel at a rate of 6 miles an hour for short level distances.

101. Halts

Make frequent short halts when the men are exposed to the cold. Select halt sites that provide protection from wind. See that your men sit on their packs during halts, because sitting in the snow dampens the clothing and this dampness later freezes. Sitting back-to-back provides a comfortable position and also helps men keep warm. If the halt is longer than 5 minutes, have the men put on their outer garments (parkas). Plan the march to reach the bivouac area before darkness and before the men become exhausted.

102. Communication

Radio is the best all-round means of communication. When atmospheric conditions prevent the use of radios, use visual communication, particularly in air-ground operations. When practicable, wire may be laid. Use foot messengers equipped with skis or snowshoes for local messenger service. When the time, distance, and terrain permit, use oversnow vehicles to maintain communication.

Weather permitting, use dogs or aircraft for messenger service when they are available.

103. March Discipline

Since every march casualty requires another soldier to care for him, guard against cases of exhaustion or frostbite by closely supervising the march rate, the pace setter, and use of equipment. (Never leave a march casualty alone in extreme cold.) Let the march pace slacken on slight uphill slopes. Do not let your men bunch up at the start or finish of a downhill stretch, but continue the march at the normal pace. After crossing an obstacle, halt briefly to close up and reform the column. Check for stragglers. Detail one leader in every unit as end man to supervise march discipline. Carry only essential equipment. Wear the prescribed clothing, with minor variations allowed for individual comfort. Maintain distances. Make halts as needed.

APPENDIX I

REFERENCES

SR 320-5-1	Dictionary of United States Army Terms
AR 320-50	Authorized Abbreviations
FM 20-15	Tents and Tent Pitching
FM 21-5	Military Training
FM 21-6	Techniques of Military Instruction
FM 21-10	Military Sanitation
FM 21-11	First Aid for Soldiers
FM 21-15	Care and Use of Individual Clothing and Equipment
FM 21-20	Physical Training
FM 21-30	Military Symbols
FM 21-76	Survival
FM 22-5	Drill and Ceremonies
FM 31-25	Desert Operations
FM 31-70	Basic Arctic Manual
FM 70-10	Mountain Operations
FM 72-20	Jungle Warfare
FM 100-5	Field Service Regulations; Operations
TM 21-200	Physical Conditioning
DA Pam 108-1	Index of Army Motion Pictures, Television Recordings, and Filmstrips

DA Pam 310-3	Index of Training Publications
DA Pam 310-5	Index of Graphic Training Aids and Devices
ASubjSed 21-22	Marches and Bivouacs
ATP 21-114	Basic Combat Training Program for Male Military Personnel Without Prior Service

APPENDIX II

UNIT STANDING OPERATING PROCEDURE

1. General

The following is that part of the unit SOP covering foot marches. Most of the topics listed would be found in a unit SOP, depending on the size of the unit.

2. Example

1st BG, 87th Inf
FORT BENNING, GEORGIA
21 March 1958

STANDING OPERATING PROCEDURE

The purpose of this SOP is to set forth procedures intended to avoid confusion and delay, to shorten orders, to expedite movement, and to provide guidance. Although all conditions cannot be provided for, commanders concerned will take prompt action to comply, as far as possible, with the intent and purpose of this SOP.

a. Warning Orders. To provide maximum time for troop preparation, a warning order will be sent to company commanders.

b. Reconnaissance Party. The reconnaissance party normally will be prepared to depart 30 minutes after a warning order to move is received. Recon-

naissance party will be briefed by the S3 before departure.

(1) *Composition.*

- (a) Reconnaissance element.
- (b) Traffic control element.
- (c) Engineer element.
- (d) Necessary transportation.

(2) *Reconnaissance report.* Route reconnaissance report will be made on the following form :

ROUTE RECONNAISSANCE REPORT

PLACE	SPEED- OMETER READING	MILES FROM SP	SUITABLE SPEED	REMARKS

(3) *Reconnaissance party recommendations.*

Reconnaissance party will recommend IP and RP, route to be used, and number of guides required and where they should be posted.

c. *Quartering Party.* The quartering party will normally be prepared to depart 30 minutes after a warning order to move is received. Quartering party will be briefed by the S1 before departure.

(1) *Composition.*

- (a) S1 (usually commands quartering party).

- (b) A representative from each company and battery.
 - (c) A representative of the S4.
 - (d) Communications, security, and medical personnel as specified.
- (2) *Duties.* The quartering party—
- (a) Selects exact location of bivouac area.
 - (b) Subdivides the bivouac area to company areas.
 - (c) Selects location of headquarters installations.
 - (d) Establishes communication in bivouac area.
 - (e) Has unit guides meet units at RP and guide them to areas.
 - (f) Has all foot formations march on the left side of the road facing traffic, except when column of twos is used, then one file may march on each side of the road.

d. Organization of the Column at the Start of a March. Company A, Headquarters and Headquarters Company, Company B, Company D, and Company C.

e. Location of Commanders. During administrative marches, march headquarters will be at the head of headquarters and headquarters company. Company commanders and platoon leaders will march at the rear of their units, moving as necessary for control. Company executives and platoon sergeants lead their units. Each company sends a messenger to the march CP before the start of the march.

f. Formation.

- (1) Highway movements: column of twos, file

on each side of road. In streets, all formations will march on the left side facing traffic.

- (2) Distances between units on highways: companies, 100 yards; platoons, 50 yards. Distances may be reduced when moving cross-country.
- (3) Distances between men: day, 5 yards; night, 2 yards; or as announced.
- (4) Guide for estimating yards of road space of foot troops:

Formation	2 yards between men	5 yards between men
Single file-----	2.4 x (number of men).	5.4 x (number of men).
Column of twos---	1.2 x (number of men).	2.7 x (number of men).

g. Rates of March.

	Roads (miles per hour)	Cross-country (miles per hour)
Day-----	2½	1½
Night-----	2	1

h. Guides and Traffic Guards.

- (1) When possible, guides will be placed before the march. They guide the column and also stop traffic from crossing the route of march while foot troops are at intersections. Guides placed out by the column rejoin the last element of the column.
- (2) Traffic guards precede and follow the column by 50 yards to slow down or stop traffic or to assist it to pass safely at the earliest opportunity.

i. Pace Setter. A pace setter precedes the column at 4-10 yards. The officer marching at the head of

the leading company will check the pace setter for proper length of step and cadence. For a speed of 3 miles per hour ($2\frac{1}{2}$ miles per hour rate) 106 30-inch steps per minute are required.

j. Night Marches. Maintain contact by connecting files.

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The Adjutant General.

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